

The Listener

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'Look, this is how': a photograph by C. B. Harrison

Can Partnership Work in Central Africa?

By Clyde Sanger

The Human Brain

By W. Grey Walter

A Vindication of Romance

By John Wren-Lewis

The Difficulty of Interpreting Science

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The Listener

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On Being the 'Base Load'

By P. H. FRANKEL

THIS is an age of big projects. Technology has opened up so many new opportunities that we are itching to try our hand at realizing them in a big way, and the bigger the better. Having been an oilman all my life, working in an industry which grew faster than almost any other, I am used to the feeling that the only mistake one can make in planning for the future is not to think big enough. But whereas the oil industry has from small beginnings grown under its own effort, some of the more recent arrivals on the industrial stage are supposed to be given a flying start. In fact to get started at all they have to be big right from the word 'go'. One feels almost a cad to say anything critical about atomic energy today, when its peaceful uses are in the stage of 'agonizing reappraisal'; it is like kicking a man when he is down. No doubt the pendulum has now swung back a little—and the more extravagant claims and projects are being looked into once more. In the longer run there is much strength in the argument that atomic power has an essential part to play in the energy supply of most countries, yet it is as much as ever necessary to remember the economics involved.

There we are first struck by the explicit assumption that any atomic power station to be built would be allocated in the programme a position within the 'base load'. That is to say, the atomic power stations would work for as much time in the year as any station could be expected to operate for technical reasons. The peak loads, however, the intermittent demand which is so

much more costly per unit of current to meet, would be left to what are called 'conventional power stations', those based on coal or oil. It is obvious that it should be so because atomic stations have a high capital element and comparatively small fuel costs, whereas the relation is inverse in the conventional stations, where fuel costs play an essential role—costs which go up and down with the actual use of the power plant. There remains the fact, however, that on present-day economics alone there would be little incentive to sink such large amounts of money in a means of producing energy unless the overriding decision had been taken at the outset to allocate the base load to the atomic stations, or rather to build them on a large industrial scale at the present state of their technological development when—at the same load factor—they show no advantage compared with conventional stations.

Such a foregone conclusion, that priority in meeting the base load *will* be bestowed upon one source of energy so as to justify the investment, is not confined to atomic energy. We have heard a good deal about the plan to bring natural gas by pipeline from the French Sahara to Europe to be used as fuel there, competing as it would with coal, hydro-electricity, fuel oil, and, incidentally, atomic energy. The feature of this project is that gas in the Sahara, where huge reserves have been found, can be obtained at a low price at source simply because there is no local market which would match the dimensions of the resource; also the actual operation of a pipeline is cheap, the critical item being

only the substantial investment in the pipeline and the pumping stations: once they are built they have to work as near as possible to capacity, otherwise the cost per ton goes up considerably.

Need for Flexibility

Consequently it is imperative to be sure that such a pipeline will not just participate in the energy-supply programme but that it will do so at once on the ground floor, that it will form part of the base load. Practically, this means that the more the base load is being 'given away' to certain means of providing energy, the more precarious will become the position of the sources of energy which are called upon to take the ups and downs, and being relegated to the fringes their economics may result in higher cost than would otherwise obtain. Yet they are needed, since it is they who are to provide the flexibility which is necessary on account of seasonal fluctuations and on account of the changes in the economic temperature as a whole: we have seen only recently what even a minor slump can do to energy demand, but there is also the need for flexibility upwards: it is not so long ago that we talked of an impending energy gap, even if just now it rather looks like there being an energy bulge.

What all these thoughts add up to is this: by allocating the base load position to one particular project we do interfere with the process of economic choices, that is we have prejudged the choice before we have had a chance to choose on the grounds of economics. Most of these prejudgments are made in favour of projects which are heavy in their capital requirements and therefore depend inevitably on the 'base-load decision', and this decision will be taken only if one considers the project as one of priority. That project itself may not be uneconomical (especially in the long run) but the decision to give it priority is in the first instance *extra-economical*. Some of these projects derive their special impetus from political considerations: the speed-up of the atomic programme in the United Kingdom was a by-product of the Suez shock, and the real driving force behind long-distance exploitation of the Sahara gas is the desire of the French to link Algeria so closely to them as to make a nationalist breakaway of North Africa less likely.

Certainly such motives could be legitimate in themselves, but we need to see clearly whence these priorities come, and we must also count the cost. In doing so we might see that some of the capital investment which is now being planned is in fact not only costly but, because it must have the base-load position, it will affect adversely other more flexible projects.

Here is one example of the hidden cost of pre-empting a solution: some two years ago there was considerable publicity for an ambitious system of oil pipelines for Europe by which crude oil would have been pumped from Marseilles right through to Rotterdam, instead of being brought there by tankers. Given a certain size of the pipeline this project (which has since been shelved) could be made to look economic, but what was not seen in this balance sheet was that the oil companies, to make the construction of the pipeline possible, would have had to guarantee to use it; by doing so they would have had to sacrifice flexibility and forgo the use of alternative opportunities which could present themselves in the form of low-cost tanker transportation and in the change of the source of the oil which could some time or other come from countries for which Marseilles might not be the most suitable point of entry.

'Affording' Atomic Development

But to revert to atomic energy: the other day Dr. Wilson, an American technologist, pointed out that only a country with sufficiently high and concentrated base-load demand for electricity, such as the United Kingdom, could afford early atomic development, and the fashion-conscious governments of the smaller countries had better have second thoughts before sinking their money so deep that they might not see it again. Have we not anyway heard of big hydro-electric power schemes in under-developed countries all over the world which are sometimes undertaken as a fillip for national pride rather than as the result of an unbiased assessment of resources, of demand, and of alternative uses for scarce capital? Often less concentrated invest-

ment, although it may be less spectacular, may prove to be the more rewarding one.

But perhaps we should not be too harsh on others and on the new countries, since we have here at home, in an old industry, a base-load problem that is very much our own: coal. It is virtually inevitable that the coal-mining communities, and with them the country, should feel that our main indigenous source of energy ought to have first call on demand so that coal can retain its primary position, and that other—imported—energy is considered expendable. Like so many things, this is a matter of degree: there is no doubt that for several reasons (including economics) this country is powered and heated mainly by coal and coal-borne electricity and gas. The question is: should this natural base-load position be stretched to include that part of coal which is so expensive to mine as to distort the picture and to scale up the whole of the energy cost of this country?

This would be the case if a tax on fuel oil were to be introduced for fuel oil to be 'equalized' with marginal high-cost coal. It is obvious that social and political considerations are involved, especially in a period of adjustment: what would be wrong, however, would be to make the coal, the whole coal, and nothing but the coal, a fetish, regardless of the fact that it might be a comparatively small part of coal production which exceeds its economic balance.

Making a Choice

Incidentally, this conception, that one source of energy has priority over others, independently of their respective economic performances, is only one aspect of a much deeper and more general problem. 'Economics' consists, in fact, only of a series of choices between one way of doing things and a great number of others. If we allocate a privileged status to any one solution the race may have been decided before it ever started. In the same way on the level of politics there might be a tendency to endow certain conceptions with a special dignity and importance, to the exclusion of others. If democracy is a process in which the citizens make their choices freely from a wide and, by definition, almost unlimited range of possibilities, a totalitarian system is based on a few articles of faith which are meant to be accepted completely and without question. The one-party system of totalitarian régimes, or a set-up which does not allow at all of the conception of parties, is one in which the country has become the preserve of one creed or fad, as the case may be. No evidence has to be produced about its merits since it is supposed to be self-evident. Is it stretching a point if one envisages a totalitarian system as allocating to itself the 'base-load' in the body politic?

If there is one significant difference between what the French call *dirigisme* and a classical capitalist economy it is that in the former the decisions, say, on investment are taken by a central committee of sorts, whereas in a system of open economics there is scope for a multitude of individual decisions which in their sum total add up to a 'trend'. The latter system, though not likely to produce spectacular results rapidly, because not all forces will draw in any one direction, will for the very same reasons avoid altogether catastrophic mistakes simply because the law of averages will result in positive and negative items cancelling each other out to some extent.

This does not mean that concentration on certain tasks and the way to reach them by accepting only one way of doing things to the complete exclusion of all others does not show results. It may get you straight to the moon. Indeed the transformation of Russia into a highly industrialized country could probably not have been achieved in so short a period by any other method than one in which the individual citizen had little if any choice, the basic decisions having been taken for the people perhaps, but not by the people.

The advantages and drawbacks of a deliberately and centrally planned economy with its clearly drawn outline on the one hand, and of the mosaic-like picture of an 'open' economy on the other, are but the replica of the situation on the level of politics. There, too, the single-minded approach gives a big advantage in the short run, but a sprinter is usually no good over a distance. A system in which there are many who can choose, and where therefore the range of choices is much wider, will prove to have a

(continued on page 525)

Can Partnership Work in Central Africa?

The last of three talks by CLYDE SANGER

THE fact that little progress has been made towards real partnership during the Federation of Nyasaland and Rhodesia's first six years—the six easiest years, the liberal Sir John Moffat called them—leads many people to say that the partnership policy has already failed. But what are the facts?

In my previous talks* I suggested that the chief danger in race relations in Rhodesia was not the paternalistic attitude of the white settler-farmers so much as the remoteness and lack of contact between white townsfolk and the intelligent urban Africans. And I also said that, though African nationalist leaders epitomized the national characteristics of their three very different territories, yet 'white ignorance', as Lord Malvern called it, generally lumps them all together, describes them vaguely as 'black racialists', and so confuses dangerously an already complicated problem.

Two questions arise from this: first, are these nationalist leaders really representative of their own peoples, or will their continued imprisonment (for more than 600 are still in prison as a result of the emergency declared in March) allow the real and more moderate leaders to rise? And, secondly, what can be done by whites to narrow the gulf between the races? I say 'done by whites' because being in power they hold all the initiative.

The answer to whether the imprisoned nationalists are representative or not must be this: no proof has yet been brought that they are not representative, except in Northern Rhodesia. In Northern Rhodesia the nationalists split into two and the more radical group announced that they would boycott the territory's elections, which the moderate group was contesting; and they told African voters not to cast their votes. The radical leaders were arrested for intimidation of voters just before the elections, and four out of every five African registered voters—there were 8,000 of them—went to the polls. This does prove that the more moderate nationalists were more representative. But the fact remains that they, too, are nationalists with the same fundamental aims as the extremist group.

Elsewhere it is the reverse picture. The arrests in Nyasaland and Southern Rhodesia have consolidated support for the nationalist leaders. When Dr. Banda was arrested, it was hoped by the Government that another Nyasaland leader, Mr. Wellington Chirwa, would voice more moderate views. Instead, he made the same demands as Dr. Banda had made weeks before. When I reported this to Dr. Banda in prison, he showed no surprise or gratification. 'Of course', he said, 'no one can speak any other language in Nyasaland now'. Here is another pointer: only three of Nyasa-

land's thirty-five university graduates have not been arrested.

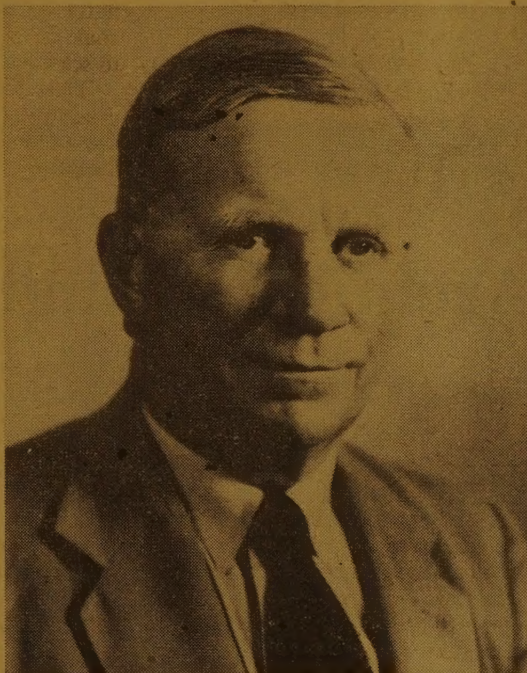
It is one of the great tragedies of Federation that those Africans who have shown most zeal in co-operating with the whites have, by stages, become discredited with their own race.

This is not due to vicious propaganda against them by black extremists. It is due to two causes: first, among the Africans are a few cynical opportunists who aim to get elected to the Federal Parliament by a predominantly white electorate, who could never earn the equivalent of an M.P.'s salary any other way, and will say exactly what their white political masters want. Other Africans sincerely believe that, by getting close to the whites either as M.P.s or journalists, they can influence the whites and so narrow the racial gap. But since the whites have never conceded enough fast enough, this co-operation ends usually in the African first compromising with his principles, and then appearing hopelessly corrupted by the system,

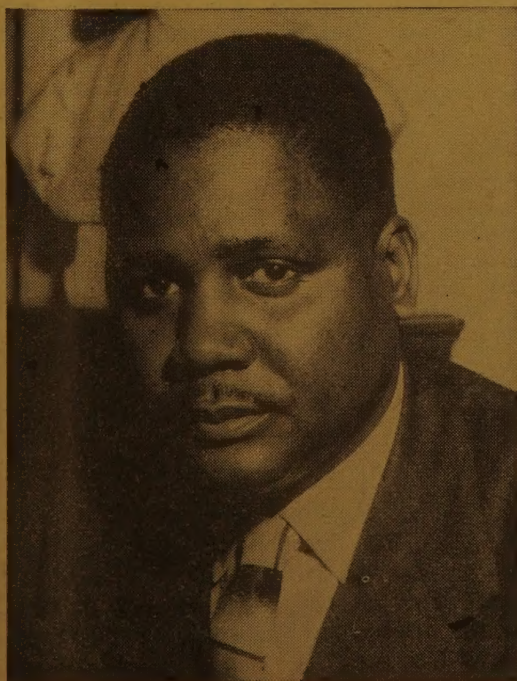
especially if he is one of the ten African M.P.s voted in by whites.

White politicians can produce an impressive list of the benefits which Federation has brought to the Africans of the three territories. The list falls into two sections, economic and social-political advancement. Africans in Northern Rhodesia and Nyasaland argue that all that has happened in social-political advancement would have happened anyway, without Federation. In Southern Rhodesia a number of forms of racial discrimination have been removed. But hardly enough has been done. The African reaction can be gauged by the recent move of the Southern Rhodesian nationalist leader, Mr. Joshua Nkomo. For years he has supported Federation—if somewhat half-heartedly—in the hope that British Colonial Office rule in the other two territories would help to 'liberalize' conditions in his own settler-run Colony. But in December, at the Accra Conference, he signed an agreement with the other nationalist leaders to 'unite in a broad front against Federation'. He had, in fact, given up hope that Federation would bring worth-while liberalization.

But it is about the economic benefits of Federation that the fiercest argument rages between white and black. Undoubtedly, Nyasaland has gained greatly in an economic sense, and if she were allowed to secede from Federation she might return to poverty; or else Britain would have to support her. Northern Rhodesia, too, though contributing her large copper revenue, stands to gain from Federation, since Federation brought in big investments and made possible the great Kariba power



Sir Edgar Whitehead, Prime Minister of Southern Rhodesia



Mr. Joshua Nkomo, President of the Southern Rhodesian African National Congress

scheme. And recently Southern Rhodesia's Prime Minister, Sir Edgar Whitehead, has framed a whole series of industrial laws which should ensure economic advancement for all races.

But while whites put all the emphasis on advancing the country—and its Africans—economically, the blacks want quick political advances to make sure that wealth is equitably distributed between the races and that Africans do not become merely a nation of factory workers. And here lies the big gulf of thought. The white attitude is summed up by Captain Charles Waterhouse, who said: 'Voting is no substitute for eating'. The African reply is: 'No one suggests it is. But often a square meal—or a square deal—depends on first having a vote'. In Northern Rhodesia blacks now make up a quarter of the electorate; but in Southern Rhodesia they comprise only 2 per cent.; and in last year's Federal elections they believed that the franchise was so unfair that they boycotted the elections. So in Southern Rhodesia they are far from having a political lever to use to gain further liberal legislation.

Most of the politically minded Africans in Nyasaland have always been suspicious of Federation, and believed that the promise of

partnership was a trick to deprive them of the chance to get early self-government on their own. Even if they are offered territorial self-government within Federation they suspect that the white-run Federal Government will keep most of the powers for itself. Nothing that has happened during the emergencies in Nyasaland and Southern Rhodesia has helped to reduce that suspicion.

It is becoming clear to many liberals in Rhodesia and Britain that, if the Federation is to survive, the whites must offer swift political advances to the Africans in Nyasaland and Northern Rhodesia, and at least generous social legislation in Southern Rhodesia. Some go further and say that the whites must be prepared to risk all—as President de Gaulle did in West Africa—and offer Nyasaland a constitutional right to opt out of Federation at a later date. They argue that the shrewd Nyasas will decide in time whether the Federation is worth remaining in. There is much to be said for this scheme, for it may well be the only effective way of putting the Europeans of Rhodesia on their mettle with an incentive to implement, in a manner acceptable to Africans, the promise of full racial partnership which they made six years ago.

—European Services

The Archbishop and the General

By DOUGLAS WILLIS, B.B.C. special correspondent in Cyprus

IN all the bewilderment and confusion in Cyprus that has accompanied the interventions of General Grivas in the affairs of this island, one thing has become clear—that Archbishop Makarios has no intention of sharing his authority with the distant General. Makarios has made it plain that he considers himself responsible only to the people of Cyprus and not to Grivas, who, he says, has no right to be the arbiter of the situation. He considers, too, that Grivas is attempting to use Cyprus as a means of gaining political power in Greece.

In that country there is more than a suspicion that Grivas has blundered in choosing Cyprus as a political issue. Most Greeks would prefer to forget the unpleasant international hiatus of the past years. There is also a feeling that in entering the political arena, although he claims that he has not, he has tarnished his shining reputation as a military hero. The Government there has suggested he is suffering from persecution mania and is no longer concerned with him, nor is it interested in his political plans. But in Cyprus itself, where political consciousness, after years of British paternalism, is less acute, the glamour remains for many.

Two Architects of Independence

But there is doubt and confusion amidst talk of plot and counter-plot, of extermination and assassination. There seems to be a necessity, in many a Greek Cypriot mind, to resolve the present doubts and confusions; to express in equal measure the affection that is felt for the two architects of independence—the booming statesman, that is Makarios, and the legendary hero in his own lifetime, Dighenis, who pulled the lion's tail for four brave years. There is a crying need for unity in Cyprus and almost everybody is crying for it. The bare minority still clamouring for Enosis is led by the Bishop of Kyrenia, who has been mentioned in talk of a plot against Makarios as an alternative leader of the Greek Cypriot people. The latest attempt to arrange a meeting between the Archbishop and General Grivas is being conducted by an ex-theological student, who is also an ex-Eoka gunman and who is now the Minister of Works in Archbishop Makarios's provisional government. Mr. Georghiadis described himself at the airport, as he left for Athens to see the General, as 'General Grivas's right-hand man'. He was going, he said, with the Archbishop's approval, but that night the Archbishop said that this was not so. Mr. Georghiadis, sitting in the Provisional Cabinet, has made a number of trips to Grivas, and how many of them have been made with the permission of the Archbishop is not known.

In all this to-ing and fro-ing the Turkish Cypriots are sitting on the sidelines watching with suspicion and indeed anxiety. To put it bluntly in homely words, they want no part of Grivas whatsoever. It is a sad commentary, perhaps, that amid all the alarms and excursions, while Turkish and Greek Cypriots combine in trying to produce a working Constitution for the new Republic and to settle outstanding problems, the energies of the Archbishop and the attention of the Cypriots are fixed on the altercation by newspaper and radio between Makarios and Grivas. Can Makarios afford to meet Grivas and talk things over with him? If he does, he would appear to be accepting that Grivas, out of office and out of Cyprus, has a right to help determine the course of the new Republic. If he does not meet Grivas he will disappoint the hopes of those in Cyprus who demand unity and an end to the present apparent divisions. He must also be concerned with the feeling of the hard-core Eoka men numbered in hundreds who, presumably, still owe some allegiance to the General, at least three of whom are members of his six-man Provisional Cabinet.

Yet in Cyprus, with all the admiration and affection that Grivas enjoys, there is no organized body of opinion that would welcome any supporter of Grivas as an alternative to Makarios. There is fear that the alternative might well bring anarchy; that any attempt to overthrow the London Agreement and continue the struggle for Enosis would achieve nothing but internal strife and bloodshed.—'From Our Own Correspondent' (Home Service)

Fresh Impressions of Soviet Russia

Two talks have lately been given on the B.B.C. about Russia today: one by Wright Miller who served in the British Embassy during the war and has recently revisited the country; the other by the American literary critic, George Steiner. The first of these two talks will be published in THE LISTENER next week

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Looking Back on Mr. Khrushchev's Tour

By CHRISTOPHER SERPELL, B.B.C. Washington correspondent

MR. KHRUSHCHEV's tour round the United States, outside Washington, lasted exactly one week by the calendar, but for those who followed him it was an indefinite and incoherent lapse of space and time, punctuated irregularly by staggering runs across airfields with a suitcase, by telephones shrilling the alarm in the small hours in strange hotel bedrooms, by furious arguments in chaotic hotel lobbies about accommodation, and by everybody asking everybody else all the time what they thought of it.

And all the time there was this continuous effort to keep an eye on the doings of this strange, troll-like, formidable figure, and at the same time to keep contact with one's own base on the other side of the Atlantic, and almost on the other side of the clock. It was like taking a series of snapshots on the deck of a liner in a hurricane, and then getting them developed and printed in the ship's wireless cabin. Not surprisingly, the pictures that came out are disjointed and even contradictory.

Here, for instance, is an old warrior, belligerent and badgered by a Hollywood magnate and a Los Angeles mayor, showing himself a dirtier in-fighter than either of them. As he said to us in the train after Los Angeles: 'When they stick the needle into me I hit back', and he illustrated his words with a gesture that went well below the belt.

Here is an outraged puritan, patently shocked by what he and other people called the pornography of Hollywood's version of the can-can, but inhibited by the presence of his own wife and a lot of pretty girls on the film set from saying what he thought.

Here, again, is the universal canvassing politician, standing bareheaded in the Californian sunshine, responding delightedly to a cheerful crowd and, with tears in his eyes, uttering the most appalling sentimental clichés about a baby that waved to him from its mother's arms. And here is the conquering hero, on his hotel balcony, on the summit of one of San Francisco's highest hills, waving triumphant acknowledgment to a large crowd whose excited curiosity he had misinterpreted as enthusiasm.

Here he is at a dinner in San Francisco, evidently expecting criticism, on the alert for veiled insult, and gradually realizing that he is getting nothing but compliments and homage delivered in the most cordial American tradition of making the foreigner feel good: and then gradually relaxing and expanding into an almost patriarchal benevolence as he responded to this constructive approach.

Here, again, is the clown-like peasant, munching a sausage in the stink of a slaughterhouse, tramping through piles of silage,

patting fat farmers on the stomach, urging his host to set the bull on the photographers, and keeping an appreciative twinkle for the girls.

If he bewildered the reporters, it was equally clear that he took the American authorities by surprise. I was reminded of the old fable of the competition between wind and sun to make the traveller take off his cloak. Before he arrived, the official plan was to demonstrate reserve, to receive him with dignity but no

cordiality, and to make him understand the American point of view as well as the American way of life. But, the more the chill wind of criticism blew, the more defiantly Mr. Khrushchev clutched the cloak of intransigence about him. If the head of the Soviet Government and his mission were not to be treated with due respect, he indicated he was ready to go home and extort that respect with weapons rather than diplomacy. But already by this time the American Government had become convinced that Mr. Khrushchev did have a peaceful mission and was not here mainly to make propaganda. With considerable alarm they tried to re-

orientate public re-

ception of the visitor, and it was noticeable that American hosts, as well as the people in the street, reverted with some relief to their natural friendliness. Operation Sunlight went into effect. Every American speaker started to accentuate the positive and eliminate the negative, and Mr. Khrushchev responded by dropping his cloak and adopting the shirt-sleeves of good humour.

To us who accompanied him, the barometer—the official barometer—was Mr. Cabot Lodge, whom the President had appointed as his escort. Beforehand, it was realized that Mr. Lodge had been appointed because of his well-known reputation for answering Soviet spokesmen back, and Mr. Lodge's own spokesman indicated he would be ready with rebuttals of Mr. Khrushchev's misleading statements. But from New York onwards—as soon, in fact, as he came into personal contact with the Soviet Prime Minister—Mr. Lodge's own public utterances were uncontroversial. It may or may not be true that he encouraged the tough attitude of the mayor of Los Angeles, but by the time we reached Iowa we were being informed that Mr. Lodge's relations with Mr. Khrushchev were as cordial in private as they were in public.

I had better end by my own answer to the question: What good did the tour do? I think it gave Mr. Khrushchev a chance to appreciate the reality of America, and Americans the chance to appreciate the reality of Mr. K.

—'From Our Own Correspondent' (Home Service)



Mr. Khrushchev, on his way to a dinner in San Francisco, kissing a young girl who presented him with a gift of flowers. Mrs. Khrushchev is in the centre background

The Listener



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Getting into the 'Lab'

SIR CHARLES SNOW and others have urged that a bridge should be built across the gulf dividing the two cultures of scientist and 'arts' intellectual in modern Britain. Now Dr. B. C. Brookes, a Lecturer in Engineering at University College, London, declares in a talk we print today that 'those who ask for better interpretations of science can be wholly satisfied only if they join the scientist in his laboratory and learn how to share his scientific experience'. Here is a challenging statement that would seem to raise many questions. Most people will accept its truth, in the sense that among military historians only a former soldier can fully appreciate a battle situation, or among religious believers only a Christian can entirely comprehend some spiritual ordeal experienced by another Christian. But is the idea of non-scientists coming into the laboratory possible in practice? This is a problem that may one day confront the headmasters now in conference at Oxford.

Traditionally, the scientific and the non-scientific cultures divide at school when the examination for the General Certificate of Education is passed. In the eyes of arts pupils an untouchable group of their companions begin separating themselves off, generally in a special building, in order to 'mess about' with bunsen burners and iron filings, half-dissected fish and fluids that are either smelly or explosive. In the eyes of the science specialist, an unlikeable group of 'arts' men appear to retreat from practical life and retire into a world that seems equally dream-like whether compounded of Latin, French, or History. How is this false barrier to be broken down? Undoubtedly, much specialization at school is caused by the depth of learning required in a subject for a pupil to be able to offer it at seventeen or eighteen in a scholarship examination. Candidates have to be trained like racehorses for up to three years beforehand. This segregates the arts pupil from the scientist, and can prevent him learning 'the Second Law of Thermo-dynamics' or even learning about any other art. One of the most brilliant classics at Oxford after the war confessed to having read no Jane Austen.

Sir Charles Snow has pointed to the ultimate dependence of this system on the way in which the Oxford and Cambridge scholarship examinations are set. It seems likely that in the next few years those who are clamouring for the abolition of compulsory Latin will be joined by others calling for a more broadly based pattern of knowledge to be required by the universities, in order to avoid so much specialization at school. Syllabuses for Advanced Level examinations could then be altered to cover a broader spread of subjects between arts and science. The principal difficulty would seem to be one of limited time. All learned subjects have today become bottomless pits of endeavour, the more so in competition. Even the ablest scholar who has specialized, for instance, in French and German alone for three years can hardly be said to have done more than scratch the surface of either language or the vast literatures associated with them. The retention in his curriculum of even a small measure of scientific study—let alone drawing him into practical laboratory work—might seem to him a distraction from his true goal. Similarly, a scientist might grudge time given to an arts subject. Yet, if not at school, where else in life can a cross-fertilization between the two cultures begin? How will an arts graduate find time later in life to enter a laboratory?

What They Are Saying

Russia woos America

THE RUSSIAN RADIO has had much to say on Russian-American cultural contacts, especially about American writers, many of whose works are now evidently being published in the Soviet Union for the first time. Moscow radio in English for North America has broadcast the following:

In reading the memoirs of Russian revolutionaries we often find that the books of Fenimore Cooper have helped to instil into them a sense of honour, courage, and a striving for action. His books in Russian and other translations are published in huge editions in Moscow, Minsk, Kiev, and many other towns of the Soviet Union; and they are included in the syllabuses for the study of Western literature in our colleges and universities. We believe that the works of this author admirably reveal the character of the American people, their boldness, energy, creative initiative and resourcefulness. Russians and Americans have much in common.

It was also announced that a Russian edition of Herman Melville's *Moby Dick* is soon to be published in Leningrad, and that translations of Stephen Crane, Richard Hildreth, and Sinclair Lewis are planned. American authors whose works had recently appeared included Sherwood Anderson, Washington Irving, O. Henry, Albert Malz, and Longfellow. A collection of essays by Soviet historians on Russo-American relations had also been published in Leningrad. Moscow home service has reported that in 1959 the Leningrad Library of the Soviet Science Academy had sent 10,000 scientific and technical publications to 178 different organizations in the United States, and in the same period received over 7,500 publications from America.

In Tiflis, Georgia, according to another Soviet transmission in English, a literary exhibition on the United States has been opened, including American scientific and technical publications, a Soviet edition of Elliott Roosevelt's *As He Saw It*, and translations into Georgian of books by Jack London, Mark Twain, O. Henry, Hemingway, and Walt Whitman. A Georgian theatre has just staged an adaptation of Theodore Dreiser's *An American Tragedy*.

Warsaw radio transmitted a broadcast in Russian via Moscow, which described how Polish students were spending their summer vacation. A skiffle group at a camp of Cracow University students was heard playing *When the saints go marching in*. A group of students described their hitch-hiking. The tune *With a little bit of luck!* from *My Fair Lady* was used as incidental music.

An indication of serious problems in Polish agriculture was given in a transmission in English from Poland:

In connexion with the present difficulties in satisfying the demand for meat, commerce has undertaken to increase the supplies to the market of other basic articles of food for which there is a growing demand—in the first place macaroni, barley, dairy products, edible oil, rice, and herring. But as our manufacturing establishments cannot always produce in full the quantity required, the supplies will be supplemented by imports from the Soviet Union, Czechoslovakia, the German Democratic Republic, and Rumania.

In Communist China's countryside the cultivators in the communes are being encouraged to go in, more and more, for communal feeding. A Peking transmission, quoting an article in the *People's Daily*, said that community dining-rooms had spread quickly throughout the countryside; in Honan province there were 320,000 of them, embracing 99 per cent. of the total rural population; the Central Committee of the Chinese Communist Party had given the setting up of community dining-rooms their enthusiastic support 'because Communists always stand for the thorough emancipation of women'.

—Based on information collected by the B.B.C. Monitoring Service
DERRICK SINGTON

Stalingrad—Point of No Return, by Ronald Seth (Gollancz, 21s.) gives an account of the battle of Stalingrad for which the author was permitted by the Russians to gather his material on the spot. In *Berid's Gardens* (Hutchinson, 21s.) Unto Parvilahti, a Finn, recounts his experiences during his ten years' captivity in Russia and Siberia.

Did You Hear That?

CARGOES TO CAMBRIDGE

'NO ONE LOOKING at the tranquil Backs of Cambridge today would imagine that brawls were common in academic life there 150 years ago', said JOHN HALES-TOOKE in 'Through East Anglian Eyes'. 'The traditional feud between Town and Gown was waged with bitterness between undergraduates and bargees well into the Victorian age. The riverside inns in Cambridge where these brawls took place can still be seen.

'Although the individual hithes or quays have disappeared, one can still see their sites. Every lawn or college garden that slopes down to the eastern back of the river was covered by a hithe in the Middle Ages. Cambridge then centred on Milne Street on the town side of the river. It was through this street of churches and inns that weather-beaten watermen elbowed their way after a five-day voyage from Lynn.

'Merchants met and bartered outside the halls that were to become the foundations of later colleges. Students drifted from inn to inn to quarrel and fight with their sworn foes of the river. Throughout this period a grid-work of narrow lanes led westward from Milne Street to the river as in medieval London. Merchants in the same trade banded together to hire a hithe. Salt, flax, fuel, corn, wine, and every other merchandise landed at its own particular quay. These extended in a line from the present St. John's College down to the lawns which form such a picturesque contrast to the pinnacles of King's College Chapel. It was Henry VI who ordered the demolition of the entire commercial centre to make way for his new chapel and college. But town planning made little difference to the waterman's life as he bullied and blustered his way from King's Lynn.

'Until Denver Sluice was built many sea-going vessels used to visit Cambridge. It was only when Vermuyden began his drainage works that it became necessary to transfer cargoes from coastal craft to barges at Lynn. When Edward III wanted transports to

carry his armies to France, the Ouse and Cam craft were requisitioned without hesitation. It may have been Yarmouth men who won the Battle of Sluys, but it was the watermen of Cambridge and the Ouse who carried the troops to the Continent. The river voyage from Lynn was lengthy because cargo was



Trinity College Bridge—

often loaded and discharged at Ely and other riverside ports.

'We know what the early nineteenth-century Ouse bargee looked like from contemporary accounts. In many ways he looked like Nelson's seamen. That is hardly surprising, as watermen were the first to be press-ganged in times of war. Many a mariner who was paid off at Lynn at the end of a voyage would sign on for a river trip to Cambridge while waiting for a new ship. We have a good idea of his craft and the Cambridge of his day from the famous series of prints by Rudolph Ackermann.

'It is also interesting to note that the Cam barges of 1800 were clinker-built craft with overlapping planks and collapsible masts not unlike the Norfolk keel.

'The waterman was born without mercy or manners. The barge sweeping downstream under full canvas would as readily ram a laden comrade straining at its sweeps as a skiff full of dons.

'Although the coming of the railway to Cambridge in the middle of last century made an immediate impact on the river trade, corn barges still made their way along the Backs until the end of the 'nineties'.



—and Queens' College: two engravings by Rudolph Ackermann published for his *History of the University of Cambridge*

By courtesy of the Parker Gallery

THE OCTOPUS

'I am an octopus eater', said HARRY CRAIG in 'Today' (Home Service). 'It is my favourite food, the apple of my eye. For whenever I go into a Mediterranean restaurant I put up my tentacle finger to the waiter and ask him to bring me *calamari* or *calamaretti*, *totani* or *seppie*, or whatever the local name may be. I will stop on the streets of Naples at the slum cooking pots and buy fifty lire worth of giant octopus stewed for days. Then "the cold, long-winded native of the deep", as Pope called it, that slithers

his great weight from cavern to cavern crushing big crabs, that gazes out of appalling eyes, is as soft as a two-minute egg. But I prefer the smaller octopus, squids, that are like a child's hand in their size, whose tentacles turn purple in the pot.

'A few weeks ago we pulled round the Punta Bianca into the Tyrrhenian Sea. We had spears, pronged like forks, and we were after octopus. Guido, the boatman, had a basket of bait, sardines. Out came two octopuses; down went the spear and up they came.



The stoep of a house in the Kruger National Park

'How to prepare them: if they are big and tough, the octopus proper, you must beat them on the rocks and cut them with a knife: if small, with small scissors. You may boil them, or fry them, or make soup of them, or stew them in their own protective ink. The ignorant say octopus tastes like rubber. But the informed know they are both splendid fish and splendid vegetable'.

HEART OF A SOUTH AFRICAN HOUSE

PETER FLINN, B.B.C. correspondent in South Africa, spoke in 'The Eye-witness' (Home Service) from Pietermaritzburg in Natal. 'In the part of the country near "The Valley of a Thousand Hills"', he said, 'every farmer and every retired townsman tries to build his house with a wide, shaded veranda or stoep, from which he may look past his brilliant shrubs and his green lawn to a distant view of brown pastures, shimmering gum trees, and blue hills. The stoep is really the heart of a South African house.

'It is also the children's storehouse. There are the customary broken toy motor-cars, but also typical South African treasures: a gourd being dried in the sun, a rock rabbit's skin that a little girl is industriously rubbing with salt. A neighbour drives in, parks his car and drops into a chair. He has brought a set of maps; he is dropping one copy on each of his calls this morning. In red ink they show everyone who is on the telephone—"just in case". Apart from the current disturbances in Natal, the fire risk is always a big one at this time of the year, with the whole countryside baked from months of rainless sunshine; and in the last two months

Africans have been setting fire to their own schools in town, to sugar cane and timber plantations. Farmers believe that the firing is part of a spirit stirred up by the African women's demonstrations. Neighbour and host dispose of the point by arguing.

'Then morning tea comes, as it will on every call the neighbour makes this morning to deliver his maps. Nor will he be able to refuse on any stoep the home-made scones presented by the farmer's wife, who sits down, on equal terms with the men, to tell how her grandmother's house was burnt down during the Zulu wars, placidly finishing her story before she turns to the tall African who has been waiting to make a ceremonial presentation of a crude rustic table he has made. It will fit well among the inanimate inhabitants of the stoep—the saddle, the sawing horse, the sun-bleached chairs—these family friends who seem to have drifted in along with the neighbours, the children, the dogs, and the orphaned lamb. Here, on the wide stoep, with the wide view, there's space and time for them all'.

THE PERFECT ALL-ROUNDER

The Darwin County Secondary School, Breadsall Hilltop, Derby, which has recently opened, is named after Erasmus Darwin. ROY CHRISTIAN talked about this celebrated Midlander in 'Signpost' (Midland Home Service).

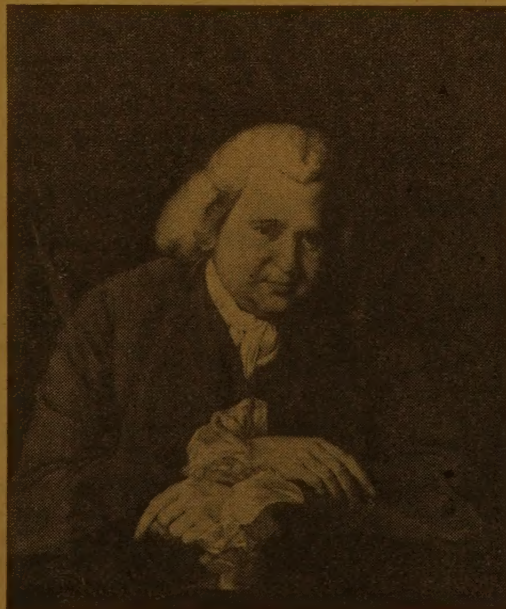
'What a wonderful man he was', he said, 'this Nottinghamshire born master of all trades. He was a scientist, inventor, reformer, physician, poet, philosopher, and prophet. He forecast the coming of submarines, motor-cars, and aeroplanes—and indeed invented a flying machine propelled by gunpowder. He drew up workable plans for canal locks, sewage disposal, and carriage suspension, and invented a kind of typewriter and a speaking machine. He even produced a slightly dim, speaking robot that never managed to say more than "papa" and "mama".'

'It is a mystery how he managed to cram all his activities into what spare time was left to him from a flourishing medical practice that took him all over the Midlands and beyond. But somehow he seemed to squeeze twenty-five hours out of every day, and found time to enjoy two happy marriages.

'Somehow, too, he had time to found the Derby Philosophical Society and to join other learned societies such as the famous Lunar Society of Birmingham, so called because its members used to meet at the full moon. At the Lunar Society he enjoyed the friendship of men like James Watt, Matthew Boulton, and Josiah Wedgwood—men of vision like himself. But other associations did not go so smoothly: like many other strong characters he fell foul of Dr. Johnson.

'Darwin was the son of a lawyer, born near Newark, but he spent most of his life in Lichfield. He came to Derby towards the end of his life to marry a wealthy widow—his second marriage. She was a member of the Pole family of Radbourne Hall. In 1801 he moved to Breadsall Priory where he died the following year.

'Erasmus Darwin should have specialized. Had he done so, he might well have been as famous as his grandson, Charles. But he was not the man to be content with knowing a lot about a little. He was the perfect all-rounder, equally at home with science and the arts, combining idealism with practical common sense. One could not have a much better example for a school to follow, could one?'



Erasmus Darwin, by Joseph Wright
National Portrait Gallery

The Difficulty of Interpreting Science

By B. C. BROOKES

IN recent years the demand has been made again and again that scientists should offer descriptions of their work and aims that are intelligible to non-scientists. But it seems to me that it has been much too readily assumed that the interpretation of science is always possible, and that any difficulty in understanding what scientists say is necessarily a failure in their technique of communication.

Let me consider what science is—no simple matter! Scientists are still sometimes spoken of as setting out 'to unravel and discover the mechanism of Nature'—a phrase redolent of the mechanist realist views of the late nineteenth century. At that period the successes of the physical sciences made it easy to imagine the universe as an enormous and complicated machine, wholly deterministic, always there to be observed and studied, as an intricate process wholly insensitive to the observations made upon it.

A Naïve View Modified

It is a professional necessity for the scientist to take a mechanistic view of the apparatus on his laboratory bench. But if one looks at the universe in the same simple way, it immediately follows that the scientist is the man who knows about the mechanisms: a technical expert who can be questioned by the layman. Explanation is then merely a matter of technique, and all scientific explanations are possible in principle. Scientific events of the twentieth century have somewhat modified this naïve view. Einstein's special theory of relativity showed that no human observer is privileged to stand and objectively observe the whole universe ticking away before him. Heisenberg's principle of indeterminacy showed that the process of observing could affect the observation.

These discoveries have led to fundamental changes in our way of looking at the world, and so in the language we use to describe it. In the eighteen-nineties, when the universe was a majestically moving mechanism of well-behaved and indestructible billiard balls, it was possible to stand back, admire the display, and be objective. Today the picture has changed. Waves materialize into matter, particles undulize into waves, space has curled up, while the universe itself has contracted, expanded, oscillated. In fact, the whole business now seems to be under new management, run not by Newton's laws but by some cosmic lottery. We are less objective than we were.

As the descriptions of the universe have changed so have descriptions of what the scientist is trying to do. According to Professor Dingle, science is 'the recording, augmentation, and rational correlation of those elements of our experience that are actually or potentially common to all normal people'. In principle, I agree. All scientific data are potentially public. In practice, however, there are snags. When my colleagues show me something new in their laboratory I share their new experience, but only up to a point. I see the pattern I am told to look for in the microscope or oscillograph, but unless I have been associated with their work I cannot fully share their intellectual experience of relating the new pattern to the old. Though in principle we can all share any scientific experience, in practice there are enormous gaps. And these are the gaps that interpretation tries to fill, in various ways, but fundamentally by language.

So the interpretation of science is essentially a linguistic matter. In fact, even the learning of a science can, I suggest, be regarded as the learning of a particular language, the language in which its data, laws, and principles are expressed. The learning of such a language is as slow and laborious as the learning of any other complex practical skill, linguistic or otherwise. If I describe the learning of science in this way it is to emphasize how linguistic the scientist's work essentially is, and how much effort he has to expend on achieving proficiency and, even more, creative skill in

his scientific language. The popular view of the scientist playing with gadgets is false. His main work comes when his overglamourized practical activities have to be expressed in the cold precise terms and symbols of scientific papers and reports by which alone his work can be publicly recognized as 'science'.

In recent years there has been increasing interest in the linguistic problems of science. But the methods of investigation that have been developed have been intended to clarify our understanding of the role and characteristics of idealized scientific language rather than to explore its relationship to natural language. So it is perhaps not surprising that the linguistic problems we meet in interpretation have been by-passed by these methods.

One method of investigation in vogue is the constructing of model languages designed to meet given specifications. Into these models any characteristics of language or logic can be built, and the model languages can then be developed, and compared with other models or with scientific language actually in use. The model languages themselves consist only of symbols representing the vocabulary, formulae, axioms, rules of inference, theorems, and possibly some abbreviations: the manipulation of the language is an exercise in abstract algebra. Such models have the advantage of confining the language to a clearly defined context, so that questions of semantics can be firmly controlled. It might seem that during the construction of model languages for science we might learn much about the translation of a science into popular language. For the study of interpretation, however, the constructed model language has certain disadvantages.

The first arises because the clear-cut distinction has to be made between the constructed model and the language used in constructing and discussing the model, between what are technically called the language (that is to say, the model itself) and the metalanguage (usually English or some other natural language by which the model is constructed). But there is no clear-cut distinction between the language of science and everyday English. In fact, as Karl Popper has emphasized, there is no 'language of science'. Even in the most abstract sciences some normal words insinuate themselves between the rows of symbols, if only to help in establishing the context to which the symbols are applied.

It is always possible to see the natural language in which a scientific paper is written, so the language of even the most advanced science cannot be wholly formalized. It is this lack of complete formalization that offers the non-scientist semantic straws to clutch. He reads of 'electron spin', for example, and visualizes at once a minute billiard ball spinning. He asks for more information to fill in the details. But the physicist has no details to offer him; to the physicist the term 'electron spin' is a metaphor, a reminder to assign plus or minus half a quantum of rotational energy to balance some equation.

Natural Language Essential

I do not support the view that it is a weakness of scientific language that it is not completely formalized. The use of a natural language is, I believe, essential to science: without language, science would degenerate into pure mathematics—into pure abstraction without physical reference. And the imprecisions of language are, I believe, the sources of the continued growth of science. But the constructed language model dodges our particular problem because it is in the interplay between natural and scientific language, in the process of constructing and interpreting the technical terms, that the problems both of creating science and of interpreting it seem to lie. However, recent work by Braithwaite of Cambridge on scientific language models throws light on the problem of interpretation. He distinguishes three levels of abstraction in a terminological hierarchy.

The terms of the lowest level are those in which the observables of the science are expressed. Here the non-scientist may

feel that he has a chance. According to Dingle, the observables of a science must be potentially observable 'by all normal people'. The technical terms have to be learnt, of course, but every gardener who can distinguish *Linum* from *Linaria* has at least begun the process in botany.

In the second level there are formulae that relate the observables to the theoretical terms of the science, and which serve as implicit definitions of the theoretical terms. A point of interest that emerges is that these definitions of the theoretical terms have to be implicit rather than explicit if the language is to be capable of growth. These theoretical terms are more difficult for the non-scientist to grasp; here he has already, so to speak, one foot off the ground. And the fact that the definitions are implicit rather than explicit adds to his difficulties. Typical examples of theoretical terms are 'gene' in biology, and 'electron' in physics: these are theoretical constructs that are not directly observable.

Both Feet off the Ground

Finally, at the third level there are formulae of great importance to the scientist himself, which contain theoretical terms only. Here the non-scientist has both feet off the ground. A typical example is Maxwell's hypothesis that in varying electric fields a magnetic field is produced which depends on the sum of the conduction and displacement currents. In Maxwell's time this hypothesis could not be tested directly because the quantities involved were too small; but among the logical consequences of it was one that was verified empirically—that electromagnetic waves, radio-waves, exist; but it was twenty-five years before they were detected.

Braithwaite has examined the role of these formulae containing theoretical terms only, and has called them Campbellian hypotheses, after the physicist N. R. Campbell who first discussed them. He has been concerned to discover whether they are logically necessary or not, and he has been able to show that in his simple language-models it is possible to avoid these hypotheses. This result means that, in principle, it is possible to recast the whole of physics, without using Campbellian hypotheses. The propositions of physics could then be explained wholly in terms of observables and theoretical terms, and so the layman would never have more than one foot off the ground.

But it is most unlikely that in practice this kind of simplification could be carried out. Campbellian hypotheses include the highest and the most general laws, the means by which enormous masses of details about observables are made to cohere. Any actual science robbed of its most general hypotheses would, I believe, collapse under its own weight of detail. These reservations apart, it will be convenient to use the nomenclature of these three levels of increasing abstraction that Braithwaite distinguishes: the observables, the theoretical terms, and the Campbellian hypotheses.

There is another and yet simpler model of a scientific language that is relevant to our problems. In his post-Tractatus works Wittgenstein often referred to 'language games', and invented games to illustrate his arguments. And Wittgenstein, just as we are, was more concerned with the semantics and linguistics—what I have called the interplay between the natural and the scientific languages—than with the syntactics and logic of the formalized system itself. I do not propose to discuss Wittgenstein's models, but merely to borrow and extend his term of 'language game' and to apply it to any scientific language or, more exactly, to any science. We can then avoid the clumsy term 'meta-language'—the name for the language in which we talk about the terms of any formalized language. The word 'meta-language' suggests something rather special but in our present context the meta-languages of all our sciences are the same natural language, ordinary everyday English.

The use of the term 'language game' may also remind us that science, if anything at all, is not an abstract cosmic calculus which scientists slowly uncover for all to see, nor even a body of knowledge piled up like hard-won nuggets, but a public activity carried out by skilled individuals; because anyone, again in principle, is free to join the appropriate club if he is willing to pay the entrance fee—the five to ten years' hard work in lecture room, library, and laboratory, to learn the language of physics, or whatever his science may be.

To talk of language games may also remind us that the sciences

severally have their sets of rules, that the fields of play are very closely defined and do not overlap, and that confusion reigns if the games get mixed up. Further, the term 'language-game' applied to science may help me to show what the limits of interpretation are, that is, what the differences between doing science, learning science, and learning about science are; these differences are just the same as the differences between playing a game, learning to play a game, and learning about a game. But science is said to use language that is 'well made' for its job, 'well made', that is, for communication. But what does this mean?

For me, communication is in some ways a simpler matter than is sometimes alleged; simpler, but an inexact and haphazard process. We go through life happily jumping to conclusions; usually we have not time to do anything else. When someone speaks we note his words and interpret them in the light of the total situation in which we find ourselves, relying on any previous experience that may be relevant. In making the interpretation we are always optimistic in the sense that we are prone to accept our first intuitive interpretation as the only possible one, and then to reinforce it by selecting from the subsequent situation just those elements that support our hypothetical interpretation, our first guess, and by rejecting or ignoring those elements which, if admitted and recognized, would refute or endanger it. We seem to be built this way. And this brings us to the crux of the matter.

The scientist reduces the risk of vagueness, ambiguity, and undue optimism in his communications about physical objects by constant reference to the objects themselves. He learns the language game of a science only by going through a lengthy and ruthless indoctrination. For years the student of science is taught how to relate words to things and things to words. Examiners constantly test his progress in his learning of the scientific language, and eventually he may qualify. During this lengthy process the context of the science is slowly but firmly established for him, not so much explicitly as by implication, as the orthodox viewpoint is remorselessly inculcated.

The first stage of learning a science is to learn to use terms applied to observables. This is not simply a matter of learning a vocabulary, though it may begin in that way. In any science in which the list of observables is considerable—in botany or zoology, for example—the process of learning the names of the observables soon becomes related to the process of learning the theoretical terms. The nomenclature of the observables reflects the taxonomic theories which provide the criteria by which classifications are made. For the amateur gardener, to name a plant may be merely to label, but for the botanist the same name places the plant in the whole taxonomic system. What I want to emphasize here is that the language of a science, even of a science in an early stage of development, has already become a limited field of discourse in which the propositions depend on and support each other.

No Short Cut

A proposition abstracted from this discourse can be interpreted as a scientific statement only within this unity, by someone familiar with the whole field of discourse. If my view is sound there can be no short cut to understanding science. Its theoretical terms are not simply a list of labels, except to the non-scientist. To the scientist they are summations of his scientific experience, not substitutes for it. What I have said about statements concerning observables applies with even more force to statements containing theoretical terms only. It is true that if the non-scientist looks through the scientist's microscope he may delude himself that he is seeing what the scientist sees. But in trying to interpret Campbellian hypotheses there are no observables, there is not even a microscope to look through, no physical object to point at. There may even be few words to catch hold of: a hypothesis may be expressed entirely in symbols as Maxwell's hypothesis is expressed in his famous equations. To paraphrase a remark by J. Z. Young: 'Those who cannot use maths cannot observe electromagnetic waves'.

It is because his theoretical terms are not merely labels that the scientist finds it difficult not to use what is unkindly called jargon. The implication here is that jargon is a pretentious and unnecessary excrescence on plain words. It is not. The scientist trying to make new and publicly observable discriminations has

to coin new words, because these are the only means by which the new discriminations can be precisely and publicly made and repeated by others. And then with the new words still newer discriminations can be made, for the simple reason that references to physical objects are always indefinite (as Ayer has pointed out) and that refinements and still finer discriminations are always possible, at least within the limits of Heisenberg's uncertainty principle. So the scientist continues to make his new discriminations and to coin his theoretical terms.

The main point about this terminology is that it is not translatable into non-technical language; if it were it would be unnecessary. Between the natural languages of present-day Europe there is, broadly speaking, a one-to-one semantic correspondence. It is this close correspondence that makes even mechanical translation possible. But between English and the language of the Trobriand Islanders, for example, there is not a one-to-one semantic correspondence. A literal translation is unintelligible, unless their social customs, very different from ours, and the context of the utterance are known and understood. In this country the languages of science grew out of our natural

language, English, and so it might be thought that it should be possible for scientific statements to be translated into non-scientific English, rather as non-scientific English can be translated into Basic English. It cannot. Even Basic English has to import its technical terms. The social customs of the scientist *qua* scientist differ from those of the layman *qua* layman. Though it is possible to translate scientific Russian into scientific English—and by machine—it will never be possible to translate, by machine or otherwise, scientific English into non-scientific English.

Here is the limitation on the interpretation of science. What I have tried to argue is that a language, any language in fact, is not simply a vocabulary and a syntax, though these may be found in it, nor simply the expression of experience, except to those who know the language, but in a literal sense it is both the experience and the expression of it. Any first language, whether it be a natural or a scientific language, cannot be learnt except by living it. So those who ask for more and better interpretations of science can be wholly satisfied only if they join the scientist in his laboratory and learn how to share his scientific experience.

—Third Programme

Man's Knowledge of Man

Mirror for the Mind

By W. GREY WALTER

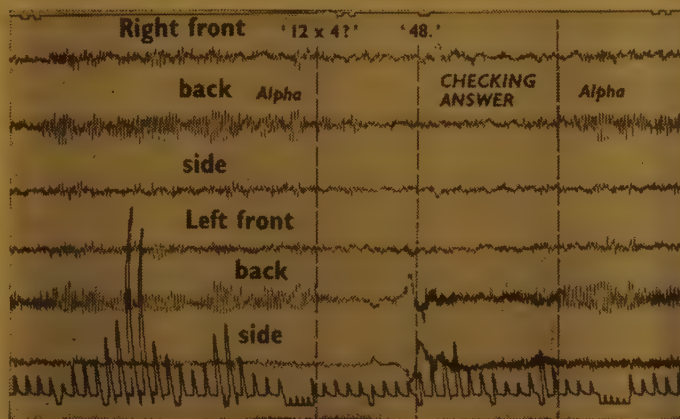
IF you read Dr. J. Z. Young's talk, 'The Beginning of Man' in THE LISTENER last week you will have a good idea of the evolution of the human brain. You will also understand what I mean when I say that man is surprisingly unspecialized in his body—he is not gifted with great physical strength, with aggressive tooth and claw, with wings or hooves or hard shell. This lack of outward physical specialization is in contrast with the quite peculiar specialization of his nervous system, culminating in the reflective brain, by virtue of which he has been able to survive where gross physical power, agility, or defences have failed to save other species from extinction, or doomed them to a subordinate role in the population of our planet.

The anatomy of the brain can be studied by dissection, as can that of other organs, but its functions cannot be isolated into independent units, because anything that the brain does—and it does literally anything one can imagine—affects in some way everything else it does. Think of the effective size of your brain. Inside your head are about 10,000,000,000 nerve cells. This is not a very large number as living cells go—in fact there are more red blood cells in your blood than that—but, unlike the cells in your blood or skin or muscles, the brain cells are in communication with one another. As a result the number of ways in which they can interact is vastly more than the number of electrons in the whole universe.

The problem of studying human brains can be divided into three main parts. The first is: How does a single brain cell work? Second: How do the brain cells work together? Third: How does the interaction of brain cells relate to the behaviour and character of human beings?

To take the last first, the study of behaviour is one of the definitions of psychology. Psychologists, in the main, observe or arrange some sort of input to the brain and then observe or measure the output, the action or impression of the human being. They are not primarily concerned with how the brain works but

with the way in which it relates sensation to action, emotion to understanding, and so forth. At the other extreme, the study of individual nerve cells is rather similar: a nerve cell can be stimulated by an input of electric currents or chemical substances and its output—its response—measured. But in between these



Records of electrical activity of the brain of a normal person doing mental arithmetic with his eyes shut. The effort of thinking blocks the regular alpha rhythms; and the persistence of the blocking after the answer is given suggests that the subject is checking the answer

extremes of single-cell physiology and experimental psychology there is this sort of no-man's land in which the interrelations of the nerve cells are what matters. So, in the brain, we are still struggling with the problem of complexity of interrelations of brain units. And if it were not for one important fact our struggle would be useless. This fact is that brain cells are electrochemical machines. This means that we can try to follow their actions by detecting the electrical effects they produce. This is not difficult now, though the currents are so small that they have to be magnified a millionfold before they can be seen.

One of the most sobering, even humiliating, facts in the whole of brain physiology is that scarcely a single phenomenon discovered by study of electrical activity of the brain—the EEG—was foreseen or predicted by physiologists, and indeed few of these electrical effects are really understood today. The EEG from the brain shows slow rhythmic oscillations of electric current, and, to make things ever more confusing, these electric rhythms tend to disappear when the brain is active. For example, when a person closes his eyes and relaxes, the part of his brain that is mainly concerned with seeing may show steady electrical rhythms at about ten waves a second. These are called alpha rhythms and were the first to be discovered. The confusing thing is that when the eyes are opened, or the person thinks hard, the rhythms may disappear. Unfortunately for our understanding of this effect not everyone shows alpha rhythms, even with the eyes shut, and in some people the rhythms persist even with the eyes open, so we are faced with an objective sign of a mystery that we accept and delight in in everyday life but find hard to fit into scientific analysis—that is, human personality.

Naturally we should be thrilled to find evidence of individual differences in the EEG, and in fact much research is now going on to see how these personal characters of brain activity are related to other aspects of temperament and training—but we cannot yet decide what these differences mean. They have something to do with the sort of images people prefer to use for solving problems, and, after all, even in the simplest situation the brain is essentially a problem-solving organ. When you have to find your way somewhere or make a decision, in effect you are setting up in your brain a working model of the situation you are in. This model may be in pictures or in words or in movements, it may be a good or a bad model, and you may or may not be able to use it to solve the problem, but the chances are that if it is a visual model you will not show much alpha rhythm in your EEG. The regular electric impulses in the seeing part of the brain that many—but not all—people show are broken up and disorganized by imagination of a visual scene, and people who do not show alpha rhythms at all are probably preoccupied with visual images all the time.

This effect, and other details, have suggested that the normal electric rhythms in the brain may be a sign of a mechanism concerned with seeking and sorting out information in the brain, so that new impressions can be compared with past experience in a systematic and effective way. It is obvious that some such mechanism must exist, because we are capable of learning from experience and making decisions in new situations; the exciting possibility is that a part of this essential function can be seen at work in the EEG, though in a blurred and confusing reflection. Here I should mention that, long before these ideas about brain mechanisms were seriously discussed, the EEG had been proved of value in solving a number of medical problems. There are many other electric rhythms in the brain beside the alpha rhythms, and some are clear signs of brain disease. By analyzing them tumours of the brain can be located, tendencies to epilepsy discovered, injuries to the brain investigated. I suppose if the method had not proved so valuable we should probably not have had an opportunity or incentive to study normal people so closely. The discovery that the electric brain rhythms are radically changed in disease has satisfied us that they are really closely connected with brain function.

To return to the brain mechanisms, the notion that alpha rhythms are connected with certain ways of thinking developed into a more specific theory, that the sweep of electrical activity over the brain was a sort of scanning process. When one reads a page of print one's eyes scan it systematically line by line. The page is there all the time, but one sees the words on it one after the other. This means that one changes the steady shape of the printed lines into a series of visual signals spread out in time. If a person is looking for a special word on a printed page, say in a dictionary, I can watch his eyes scanning, and I can tell when he has found the word he wants—or one even more interesting—when his eyes stop moving. Is this the sort of thing that is going on in the brain when an alpha rhythm stops as a person thinks?

You will realize by now that we have much difficulty in explaining what we mean by mechanisms in the brain. If I say to you: 'The brain is a machine', someone will certainly say: 'It depends on what you mean by machine'. If we try to put such ideas into mathematical form, few understand them, and the physical meaning of the terms and constants is often obscure.

Some of us have resorted to the ancient and well-tried expedient of making working models to show what we mean by such ideas as scanning, learning, and so forth. These models are

far simpler than any real brain; in some there are only two elements like nerve cells instead of the 10,000,000,000 in your head. But their simplicity is a virtue, not a limitation. They are crystallized hypotheses, crystal-clear, crystal-pure, and brittle as crystals; they break clean when they are wrong and do not bend and give, as words do.

The fact that we feel impelled to make models of brain function means that we know a good deal about the brain—one only realizes how much one knows when one has to design a model. And then one realizes how much, and quite specifically what one still has to learn—because a good model always shows a little more than one expects. Our models have taught us much already. For instance, in one that has a scanning device to resemble an alpha rhythm, we noticed behaviour that looks like 'free-will'. The model seemed to choose readily between two exactly equal alternatives instead of hesitating and missing both as you would expect a stupid machine to do. Then we realized

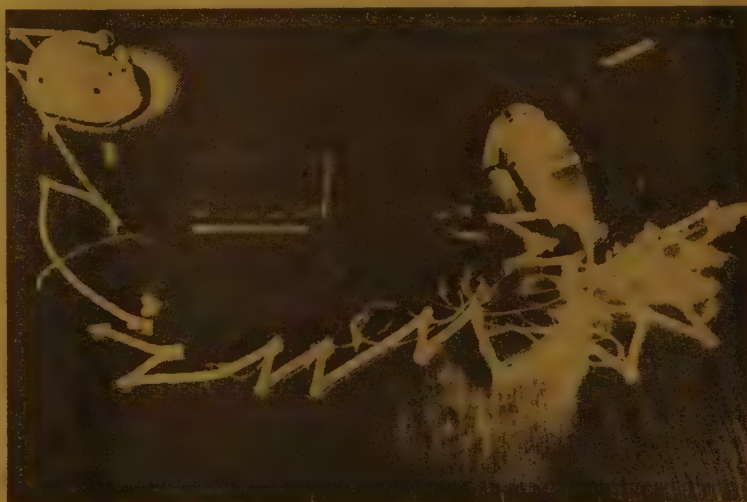
that scanning, which means turning spatial patterns into time ones, must have this effect, because time cannot have the symmetry of space—one signal must come before the other. So the arrow of time we deplore as a signpost to the grave points the way to decision.

Another aspect of brain function that models help to clarify is memory. No one has yet identified a specific memory mechanism in the brain, though clearly a vast amount of information must be stored there in some way. The study of models has suggested that before we try to look harder for memory in the brain we should distinguish between the various ways in which traces of experience may seem to be

stored. A very simple model with no internal memory at all often seems to behave as if it remembered, because its state and behaviour at any particular moment are determined by what happened just before, and its whole life path is a sort of narrative of what happened to it. This is a rudimentary form of memory, and is found in simple systems. It is seen in an old shoe that remembers the shape of the wearer's foot and the path he has trodden.

What is much more interesting is the sort of memory that we call association, whereby events that are significantly related in the sense of affecting our survival or happiness are selected out of the background and fitted together to form a pattern of meaning. How is the electro-chemical machinery in the brain organized to achieve this so smoothly and efficiently? Another lesson we have learned from models is that a complex system does not need much predetermined organization to build up a selective and effective store of associations to match even a very elaborate environment. Much of the interconnexion between brain cells must be left to the chance and change of experience.

We do not know how our brains build their models of experience, but we do know that there is a constant comparison of outside events and internal models of them, in reflection of experience, in perception. These are private personal processes, rich in variety and originality, and we may say: 'I reflect—therefore I am—myself'.—General Overseas Service



The two-element model, built to mimic rudimentary animal behaviour, can succeed in getting round an obstacle and finding its way to a source of 'food'—in this case electric current. The hesitation shown on the right indicates reluctance to approach the bright light until refreshment became essential

The photograph on our cover this week is now on exhibition at the Royal Photographic Society, 16 Princes Gate, London, S.W.7.

Correspondents have written to point out that the print of Dr. Johnson at 'The Mitre' reproduced on our cover last week was from a Victorian engraving based on Reynolds's portraits and not a contemporary print.

A Vindication of Romance

By JOHN WREN-LEWIS

THE most important thing about modern science and technology may not be their material achievements so much as the feelings about the world which they bring with them—feelings which the majority of people today take completely for granted. In our age people do not regard the natural order, including their own bodies, as particularly alien or fearful: for this reason it is the first period in human history in which the age-old dichotomy between the romantic and the classical outlooks can be overcome: overcome by the vindication of the romantic impulse, so that it does not pass over, as it always has done hitherto, into the romantic agony.

The term 'romantic' and the opposition 'romantic-classical' have been so bandied about in literary and aesthetic discussion that they no longer carry any clearly defined meanings; but I am using the term 'romantic' in the same way that ordinary people use it when they talk about romantic love. Indeed, one of the things I want to argue is that the term has come to have rather more outlandish meanings in literary criticism precisely because the primary romantic impulse, which is known to everyone in the ordinary situations of life, could not be taken seriously by artists or aesthetically sensitive people in the psychological atmosphere of earlier ages without becoming diseased in the process. The classical treatise on this subject is M. Denis de Rougemont's book, *Passion and Society*, in which he shows how the proclamation of a high romantic doctrine of love between the sexes in medieval Europe was accompanied by a fascination with death and a general desire to renounce the body and physical sexuality. This book came as a revelation to most twentieth-century intellectuals when it was first published, and unsophisticated people still find it decidedly puzzling when they are told that the romantic love celebrated by the troubadours involved a denial of sex. This puzzlement is a direct expression of the fundamentally different feelings about the physical world which modern man has as compared with his medieval or renaissance counterpart; and I propose to concentrate briefly on this issue because it epitomizes the more general case I am trying to make.

In seeking to explain why the troubadours wanted to fly from



Romantic love in the Middle Ages: Guinevere begging Lancelot to join the Round Table (from a fifteenth-century manuscript)
From 'Sir Lancelot of the Lake', by Lucy A. Paton (Routledge and Kegan Paul)

the flesh, I do not think nearly sufficient account is taken of the fact that physical life must for the most part have been unpleasant in ages which wrapped babies in swaddling clothes, had no sanitation and few means of personal hygiene, were at the mercy of most diseases, and had no means of coping with elementary domestic labour except the employment of brute human effort.

All these unpleasantnesses can still beset life today, but in our technological society people's attitude to them has changed. They regard them as essentially remediable. A typically modern man forced to endure ghastly physical conditions in prison, or on an expedition, is not tempted to set the flesh and the material order as such aside, because he regards his condition as a temporary one. Even a man suffering from an incurable disease can still, today, feel that his lot is one for which there ought to be a cure, and probably will be a cure in ten years' time: he does not usually conclude that the disease is physical life itself. Science and technology are not even within sight of abolishing disease and pain, and they have introduced new horrors of their own—ugliness, boredom, huge agglomerations of people, and the hydrogen bomb. But, for all that, people do not feel that physical life is inevitably and inherently unpleasant. Almost automatically, without any taking thought at all, they feel that the physical world is capable of manipulation: the fates have retired. The specific evils of the technological age do nothing to contradict this feeling, since they are all directly traceable to the sins of human beings: they suggest nothing one way or the other about the essential character of physical nature.

A considerable act of imagination is required to envisage what it meant to live in a culture where the possibility of nature being manipulable was unthought-of. It is not enough to look at the vast numbers of humble folk in the modern world whose



Marriage for love in Victorian England: a contemporary photograph

lives are not yet touched by science or technology. Such relatively primitive people may not be disgusted by the physical unpleasantness of life—although modern research tends to suggest that more of them are than we used to think—but if they are not, it is because they are not much conscious of themselves as individuals at all. They mostly feel themselves to be part of the great organic pattern of natural life, and such romantic impulses as they have are lived out vicariously in the mythical figures of their social leaders, saints, heroes, or gods. Even here, if we look again at some of the sacrificial cults and ritual purifications to which these mythical figures are subjected, we may discern some evidence of a sense that the highest human feelings are degraded by contact with ordinary physical life.

Individual Self-Awareness

But genuine romanticism requires the existence of a high degree of individual aesthetic development—individual self-awareness, and, even more important, awareness of *another* individual as a person, rather than as just another fellow-member of the tribal complex. Given such individual aesthetic awareness, in a society without technology or the feeling that nature can be manipulated, a wish to escape from the unpleasantness and weariness of the flesh and the natural order would be almost inevitable.

This was one of the principal reasons why the high culture of Greece, with its romantic glorification of the human body, was also the breeding-ground of life-denying mystery-cults. It was the real psychological reason, I believe, why Plato concluded that the philosopher, who was capable of apprehending absolute beauty and love through the relationships of ordinary life, and who should properly order the whole of society in terms of his vision, would in fact end up sheltering behind a wall as from a storm.

In the early history of the Christian Church the same feeling manifested itself in the considerable number of heresies which sought to deny the official doctrine of the Incarnation. The gnostic writers, for example, expressed incredulity at the thought that the Godhead—which amongst other things means absolute beauty—could possibly be said to have manifested itself in a child born between the urine and the faeces. They insisted that the whole material order must be the result of some cosmic fall, and the language they used in explaining this was sometimes overtly concerned with the unpleasantness of physical life: for example, it was said by one writer that before it fell into our evil order of matter, the human soul enjoyed a perfumed existence in heaven. The modern theologians who argue smugly how right the Church Fathers were to oppose the neurotic puritanism of these heretics have in my judgment simply failed to understand how the heretics felt. Their reactions may seem neurotic and puritanical today, but at that time they were the almost inevitable reactions of any reasonably sensitive person who had been granted a vision of the possible length and breadth and depth and height of love between persons. I am not saying I think they were right: on the contrary, I believe the Church Fathers were correct in holding them to be most profoundly mistaken. What I am saying is that modern theologians who support the Church Fathers, and perhaps even some of the Church Fathers themselves, were right for the wrong reason—and which Mr. T. S. Eliot would call the ultimate treason.

Diminishing the Christian Vision

All too often the defenders of Christian orthodoxy have succeeded in affirming the body and the natural world only at the cost of diminishing the intensity of the Christian vision of love. This is particularly true of the love between the sexes. On the whole, the Church of the early centuries avoided the pitfalls of romanticism in the field of sexual relations only by avoiding any suggestion that the love between the sexes could possibly be connected with the intensity of love which Christianity held up as an object of worship. The life of sex was affirmed simply as the means of propagating the species, and men and women were enjoined to accept its unpleasantness as part of the business of carrying life on. The only possible connexion with the overflowing divine love was held to be in the exercise of a passionless charity between men and women, as nearly as possible like the affection between brothers and sisters.

It was often the spiritual descendants of the gnostics, as M. de Rougemont showed, who held that this was not good enough, and insisted that there could be an apprehension of absolute love and beauty in the experience of sexual love. In contrast to M. de Rougemont, however, I believe this was a valid and important intuition—as indeed the intuition of gnosticism generally was valid and important. What was needed to vindicate it was that very sense of the manipulability of nature which we in our age have been granted; and I believe that the real core of Christian orthodoxy was just such a belief about nature, a belief expressed in the doctrine of the resurrection of the body. All too often, however, this faith was largely forgotten when the Church opposed the heresy of romanticism. In striving to counteract the harsh exaggerations of romanticism, the Church often lapsed, in spite of its Christian terminology, into something much older than Christianity; namely, the outlook which in literary criticism has come to be called 'classical', which I believe to be the absolute reverse of the Christian faith.

The classical outlook, in essence, tries to subordinate the individual consciously to the organic unity of nature, as he is unconsciously subordinated in primitive life. It holds that the things of ultimate value are the great prehuman patterns of order in the world. In sexual life it holds that the important thing is the institution of marriage, and marriage is a convenient arrangement for securing the continuance of the race. Human feelings are of secondary importance. The modern notion that marriage ought to be founded on romantic love would be dismissed as utter nonsense by the upholders of the classical outlook; and the romantics of past ages would have agreed with them in this. The romantic love celebrated by the troubadours was, after all, almost always envisaged as extra-marital. Until recently, everyone assumed that romantic love and beauty were something apart from the laws of natural life, and vice versa. The union of the two, which modern men and women tend to take for granted, is actually one of the most hard-won and precious achievements of the human race.

A Precious Achievement

It is a precious achievement. I do not in the least agree with those modern Christian spokesmen who, because of the chaos that results today from false romanticism about sex, urge us to jettison the romantic concept altogether in favour of a new version of the classical one. In taking this line they are really betraying Christianity itself, for the modern feeling about the manipulability of the natural world is one of the central Christian insights which historic Christianity has for the most part failed to maintain. At the beginning of the Bible there occurs not only the assertion that God created the material world—an assertion which can be made the basis of a classical world-view—but also the statement, not found in any other religious tradition, that what God created was a realm over which man could and should have dominion. The fact that nature appears to go its own way without regard for man as an individual is explained, in the Book of Genesis, as a consequence of man's failure to live his own human life properly.

This was the basic faith about the world which the Jews maintained throughout their history, and Christianity was born out of the conviction that one man had restored the proper pattern of personal life and had then given palpable demonstration of his dominion over the material order by rising from the dead on the third day. I am not here concerned to argue the evidence for this faith, although I believe the advance of modern science provides more and more grounds for holding it, revealing as it does the radical relativity of all the apparently immutable laws of the natural world. What I want to make clear is that this resurrection-faith of Christianity is, logically and psychologically, utterly different from any sort of classical world-view which attributes the patterns of nature as they are to the will of God, and enjoins men to accept them for this reason. The various romantic heretics were, I am sure, right to refuse absolutely to worship a God who could be responsible for nature as we ordinarily know it: they were in a real sense truer to the spirit of Christianity than their classically minded opponents, for the effect of affirming this world as we know it to be the will of God is in fact, as William Blake saw, to worship the principle which the New Testament calls 'the Prince of this World'.

Yet of course the romantic heretics did lack the true resurrec-

tion-faith of Christianity, which seems to me to have been kept alive in the Church by only a small minority of people in each generation; although it occasionally burst out into public expression at the hands of poets like Blake, and Dante before him. The faith produced its effects, however, on a far wider scale than this. Like the leaven and the mustard-seed of Christ's parables, it was at work underground in Christendom even in the minds of men who did not consciously hold it at all, and it began to emerge in a new form at the end of the Middle Ages when the first stirrings were heard of that movement which has come to be called the scientific revolution.

The scientific revolution took place in Christendom, and nowhere else, precisely because Christendom carried at its heart the conviction that nature was relative and manipulable. Historians of science have often remarked on the puzzling fact that science as we now know it only got going seriously after the sixteenth century, although the men of the ancient and medieval worlds studied the world just as hard, and were every bit as clever and every bit as capable of ingenious experimentation. Professor Butterfield, in his book *The Origins of Modern Science*, argues that what really brought the scientific revolution about was a change in man's feeling for matter. I suggest that so long as men take it for granted that nature goes relentlessly on her own way, they will always assume that the task of science is to interpret the world in various ways. It is only if they believe that nature can be changed that they will set out to change it, and historically speaking this revolutionary idea entered our culture through the man who flung down the ultimate challenge to the classical worldview by saying that the Sabbath was made for man, not man for the Sabbath.

So I believe that our scientific and technological culture is a profoundly Christian culture: more Christian in its unconscious assumptions than the so-called ages of faith were in their conscious professions. Our great need is to make these assumptions more fully conscious, to see them in a proper historical perspective, and to work out a rational basis for them. Unless we do, we are liable to be overcome by failures of nerve, when things go wrong, and allow ourselves to be seduced by new propagandists for the classical outlook—or perhaps into new versions of the old romantic despair. The churchmen who seek to disparage the notion that marriage ought to subserve love, rather than *vice versa*, are

victims of this failure of nerve. On a more general scale, there is a strong movement afoot in the Western world today to introduce the classical philosophies of the East, in reaction against the destructive potentialities of science and technology; and spokesmen of this movement argue that science can never really make the individual human body anything other than a source of suffering, so we really ought to stop trying. At the opposite pole, M. Sartre announces that the only sensible attitude to life in this world is one of nausea. Sartre and the existentialists are the modern romantic heretics, over against the new classicism of the so-called perennial philosophy. I have to confess that here, too, my sympathies tend to be with the romantic party. I think the argument of *La Nausée* is mistaken, but the experience of living in occupied France gave every excuse for it, whereas the exponents of the new perennial philosophy seem to me wrong-hearted.

What we really need, however, is a coherent philosophy to show the full logic of the basic faith of our civilization, so that we are not seduced by either party. In the specific case of sexual life, we need a philosophy which shows how we can avoid the pitfalls of naïve romanticism of the Hollywood variety without abandoning belief in romance as such; and shows too how justice can be done to the claims of family life without abandoning the belief that love relationships between persons are of primary importance. Once again, this specific issue epitomizes the more general one. The philosophy our civilization needs is one which shows how the whole of organic life can be made to subserve personal life, instead of overriding it.

The actual practice of science and technology is important in this, and if we keep our nerve we shall recognize that almost always the evils of technological society are overcome by the application of more and better science, not less. Beyond this, however, we may discern all sorts of trends in modern science, especially in physiology, that suggest that the ability to make the human body the servant rather than the tyrant of personality turns upon the achievement of a new quality of love in personal life itself. This is something like a re-statement of the original doctrine of Christianity, and my own guess would be that this is what we need. Whether it takes anything like the old dogmatic form or not, it is the supreme vindication of romance in ordinary life.—*Third Programme*

On Being the 'Base Load'

(continued from page 512)

built-in staying power, an elasticity, a faculty of overcoming setbacks, which the other one—sharp but brittle—will inevitably be lacking. The reason is easy to see: in a democracy where before any one thesis is accepted several separate (maybe contradictory) theses are available for choice, even the downfall of the ruling thesis is not the end of all things: British public opinion especially is never surprised by the failings of those it has voted into power. But in a totalitarian—monolithic—system a major setback to a ruler can be the end of the whole régime. 'He that climbs highest has the greatest fall'. A totalitarian régime must either prevail absolutely or else it heads straight for some sort of *Götterdämmerung*. In a minor key, 'the Fuehrer or the Party can never be wrong'; failure of a plan cannot be due to error or miscalculation—such admission would destroy the mystique on which the system is based—it can only be the work of the devil, the result of crime and treason.

One more comparison could perhaps make the position clear: it will show what happens when the range of vision is in turn narrowed and widened: the scientist who is out to find the cause of a disease (and its cure) has to approach his task with some sort of a one-track mind. Only concentrated attention can provide the knowledge required. Only desperate determination to succeed, there and then, gives the courage to overcome countless obstacles. But once he has succeeded in isolating and fighting a virus he is faced with the problem of the side effects of his remedy. It is then that one realizes that the illness to be cured is but a part of an infinite range of features, all of which together make up the living

man. Many a wonder drug, although it did the immediate job it was supposed to do, failed in the end because of its side effects or its failure to sustain the initial success. Yet if those who did the research had not closed their minds to extraneous considerations, if they had not given the base-load position to the one illness they wanted to cure, they might not have got anywhere.

You may ask how far I have strayed from the line I took at the outset in talking about the base load of the energy supply system. Not too far, I trust, if I have been able to show that the problems in economics, in politics, and elsewhere are in fact of the same order. In the process of choosing, one can either have a large area pre-empted, that is one can allocate a substantial part of the base load at the outset, or one can look for flexibility—freedom, one could call it. There is probably not any one ready-made answer to that dilemma. The Roman republic had dictators in time of war and their normal constitutional procedures in peacetime; but then in Rome there usually was a war on.

Perhaps we in the West are biased, but we are inclined to cherish our freedom of choice, and we allocate base-load positions only after a good deal of heart searching or, in economics, after having sharpened our pencils. Competitive economics are less spectacular than economics where the result of selection can be prejudged, and democratic politics tend to look more messy than a political set-up in which one conception is all-pervading. Yet the systems of democratic economics and of competitive politics call forth a state of intrinsic health which no one panacea or wonder drug can bring about.—*Third Programme*

General Election Broadcasts

**Mr. Harold Wilson,
Mr. Aneurin Bevan,
Mrs. Barbara Castle, and others**

ANTHONY WEDGWOOD BENN: This is another campaign report from the Labour Party radio and television operations room. There is today great anxiety throughout the country on the subject of take-over bids, which we hear about all the time. Small investors are anxious about their savings. There's a growing demand for changes in the law.

In view of this we begin tonight with a special spotlight on take-over bids. Harold Wilson, who's in the middle of his campaign in Lancashire, has come in specially to a B.B.C. studio in Liverpool to deal with it. But first, what is a take-over bid?

Voice: A take-over bid is simply an attempt by one man or a financial group to take over control of another company. They do this by offering the shareholders of that company a much higher price for their shares than they could get by selling them in the ordinary way. At their worst take-over bids are used as a means of building up financial and commercial empires, or creating or strengthening monopolies. Frequently they are made in order to get hold of valuable freehold property, with the sole intention of selling it off for a quick profit. These property deals may affect the homes and lives of thousands of people.

Who makes the money in a take-over bid? The shareholder gets a much higher price for his shares, which means a capital gain on which there is no tax to pay. The man making the bid gets control of the company he wants, with all the financial, commercial and personal advantages which go with it. And the directors who are displaced by the new boss usually get a large lump sum paid to them, which is again tax-free, in addition to the clear profit they may gain as shareholders.

At no stage in this whole operation do the interests of the nation, the interest of the workers in the company, or the interest of the customers, enter into it.

Wedgwood Benn: That, then, is a take-over bid. Now over to Liverpool—come in Harold Wilson.

Harold Wilson: These developments in the City confirmed the warnings that we gave in parliament months ago. A genuine industrial merger, aimed at increasing industrial efficiency, is one thing, but these City deals are based purely on get-rich-quick gains for a few, and have nothing to do with efficiency or productivity.

You may well ask what contribution they make to the great industrial challenge Britain is facing in the world from Russia and Germany and Japan and the United States. Yet tory ministers supported these manoeuvres and refused to intervene.

What would we do? Well, three months ago we demanded in the House of Commons that the Government should have a full-dress inquiry into the whole question of take-over bids, and

into their effects—economic and social. But the Government refused. We would set such an inquiry on foot as a matter of urgency. But, of course, our Capital Gains Tax would do a lot to curb them. Why should these gentlemen make millions tax-free, when the rest of us have to pay taxes on all we earn?

Then, again, the repeal of the Rent Act would cut out a lot of these property deals. Deals where millions are made by a few, out of the increased rents the tenants are now having to pay.

Wedgwood Benn: Harold Wilson is now going straight on to his next meeting, which is in Kirkdale, Liverpool.

Next, foreign affairs. Can we end the Cold War? What can Britain do at the summit? These are the questions that everybody is asking. Christopher Mayhew put some of them to Aneurin Bevan.

Christopher Mayhew: What about nuclear disarmament, Nye? Can Britain really influence the Russians and Americans on this?

Aneurin Bevan: I'm quite sure she can. When we were in Moscow and speaking to Mr. Khrushchev, we mentioned this issue. I pointed out to Mr. Khrushchev that the United States and Russia, giant Powers, were not going to be giants for long. In other words, other nations—in the next ten years, perhaps—about twenty of them, will be able to make nuclear bombs, and therefore I said to Mr. Khrushchev: 'You won't be a giant for long, you know'. He didn't like this very much because, having planted firmly the laurels of victory on his brow, he didn't like to think that they might be snatched away before long by weaker hands. But, nevertheless, he seemed to appreciate that the facts are that only a very short time is left to the big Powers to make peace.

If, therefore, the smaller nations, the medium nations, like France, like Switzerland, perhaps, like Sweden, India—if they make the hydrogen bomb and start testing it, an agreement to stop the tests between Britain and Russia and the U.S.A. will be of no value at all. And therefore we said to them: 'You must really apply your minds to this problem. And it's not merely enough for you to say that you're going to stop them, because they will say to you, all right, but exactly the same reasons that led you to make them are equally valid for us'. Now the fact that Great Britain—that the Labour Party—has already declared against these tests, has already decided to initiate a policy to persuade other nations to stop them, with the promise that if they do so Great Britain will not have any of her own at all, I think will have a very, very important bearing upon the conduct of other countries, and therefore I consider that for a Labour Government in Great Britain to initiate these policies will have an enormous effect right throughout the world.

Mayhew: Why do you say that the Labour Party is better qualified than the Tories to represent Britain at the summit?

Bevan: We had built up for some years a reputation for civilized conduct. The independence granted to India, to Pakistan, to Burma,

to Ceylon, had shown that we were adjusted to the realities of the twentieth century. And the conduct of the tory government in 1956, its wantonly invading Egypt, deceiving the United States—in violation of the Charter of the United Nations—did us immense damage indeed, from which we have not yet recovered.

The British Labour Party opposed this adventure, and therefore the country would be very much better if it were represented at the international conference by a Labour Government which would not be tainted with the poisons of the Suez adventure.

Mayhew: I take it your personal approach at the Foreign Office would be rather different from Mr. Selwyn Lloyd's?

Bevan: Well, I would hate to try to make a comparison of that sort. Mr. Selwyn Lloyd has been Foreign Secretary for some time and I think most people would say that his record has been quite disastrous. If after two or three years at the Foreign Office my record is as bad as that I hope I should be kicked out.

Wedgwood Benn: That was Nye Bevan talking to Christopher Mayhew.

And now to a subject much closer home: the cost of living, prices. How often have you heard comments like these?

Voice: I've nearly always had the same amount of money off my husband, but it doesn't seem to go as far. I mean, I get the same things as I do every week, yet I'm no better off and I'm not buying extra. It's only just the same food I'm buying. I'm not adding to my home.

Voice: No. I should say the cost of living is going up, definitely. My money never seems to go as far as it used to.

Voice: Oh, well, as they grow older so their clothes get more expensive. I think children's clothes are an absolute racket—you pay as much for their clothes, as much for their shoes, almost as much for their coats, as you can for yourself.

Voice: I think the ready-made things are really shocking.

Voice: I think that quite honestly they spend a lot on advertisements that could be going into the goods.

Voice: I only said to my hubby yesterday that the money doesn't go nearly so far.

Wedgwood Benn: Every housewife knows what prices are like. On the average, for something costing 20s. when Labour was in power, we now pay 26s. 11d.: 20s. of food then costs 30s. now. Bread is up from 6d. to 11d.; bacon from 3s. 1d. to 5s.; meat from 2s. 6d. to 5s. 6d., and tea from 3s. 8d. to 6s. 8d. Listen to what Mrs. Barbara Castle has to say about it all.

Barbara Castle: Of course prices are too high. Labour says the high cost of living is one of the major failures of this Government. During eight years of Conservative rule the value of the pound has fallen by 5s. Think of food; think of rents; think of mortgages. These have all gone up. To deal with inflation the Conservatives have used the traditional tory remedy. They cut production and deliberately created unemployment. We say this policy is out of date and cruel—like blood-letting as a cure for sickness. Labour believes that if we want lasting pros-

perity it must be prosperity which is fairly shared. And not only that: production must be increased. We must use the latest scientific methods in our economic life. Our factories must be more efficient. That is the way to keep prices stable. And not only that: we shall protect the housewife. We shall protect her against hire-purchase ramps and shoddy goods. We shall insist on value for money.

Wedgwood Benn: That was Barbara Castle, Chairman of the Labour Party.

And now the countryside, Britain's richest heritage. Here is Wilfred Cave, himself a farmer, to talk about it.

Wilfred Cave: Yes, I can well remember the years between the wars. Farms were going derelict and workers were flocking into the towns in their thousands to swell the ranks of the unemployed. I also remember how, when the war ended, we were afraid that things would return to their pre-war depression. I also remember how I, and other farmers and farm-workers, were relieved when Tom Williams introduced the 1947 Agriculture Act, which gave security and stability to the countryside. How sorry we all are that Tom Williams, through ill-health, will not be our next Minister of Agriculture.

But there are still many black spots in our lovely countryside. Many farm-workers live in tied houses, from which they can be evicted at short notice. This does not often happen, but the fact that it can frightens many farm-workers, particularly when they're getting older. Labour will remove this injustice.

This wonderful summer has shown up how poor are our water supplies in many rural areas. Water for man and beast has dried up, often in villages near huge reservoirs serving great cities. Could there be a stronger argument for Labour's plan for a national water policy? Compare our haphazard water supplies with a well-organized nationalized industry like electricity. The grid system is taking supplies to more and more hill farms in Wales and cottages in the Highlands. We want all the amenities for the countryside, so that all who live there may enjoy a full and satisfying life.

Wedgwood Benn: Now a word about the campaign in the country. Reports have been flooding into our headquarters from constituencies all over Britain, telling of record numbers of party workers volunteering for duty, and of crowded and serious meetings. This election is causing greater interest, sober interest, than any since 1945. If you want to read about Labour's case more fully, there is one book we recommend and that is by Roy Jenkins—*The Labour Case*, published by Penguin at 2s. 6d.

Now, listen to Sir Compton Mackenzie speaking for himself and millions of others who've had enough of this Government.

Compton Mackenzie: I have never voted for a tofy candidate in fifty years. But I shall vote against the Tories at this election with more zest than I have ever voted before. Throughout my life the Tories have never learnt anything from experience. They've never been able to grasp cause and effect, and now, as I approach advanced old age, I feel my mind cannot be at the mercy of these boneheads.

Wedgwood Benn: Finally, the question of the day, which on your behalf we are putting to the Prime Minister personally. 'Mr. Macmillan, will you give a pledge that Britain will not be

the first country to break the present truce in the testing of nuclear weapons?'

—September 25

Mr. Harold Macmillan

AT THIS STAGE of the election there's a lot of bewildering talk on every subject under the sun. Speeches, newspaper articles, broadcasts, pamphlets and all the rest. There's a danger that we shan't see the wood for the trees. But what this election is really about is quite simple. Which party is going to form the Government for the next five years? It must be either a Conservative Government or a Socialist Government—everybody knows that. Whether there are two, three, or even more candidates in any particular constituency, the outcome must be either a Conservative or a Labour Government.

Tonight I want, as simply as I can, to put a few thoughts to you that may help you to make up your minds. The new Government in the new parliament, whichever party it is, will start with this advantage. They will find things at home pretty good. The nation is paying its way in the world, and because of that it is, in the main, enjoying an amazingly high standard of living. Of course, there are exceptions. I'll come to them in a minute. All the same, what I say is broadly true, and everybody knows it.

Things haven't always been easy for our country since the war: we've certainly had plenty of problems. One of the worst has been inflation. Everybody knows what that meant—rising prices. Everybody has suffered from that, especially those with fixed incomes; notably those who have retired and live on their savings or on pensions. It's true that pensions have been increased since 1946, once under the Labour Government and three times under us. At first the increases weren't enough, even to keep them level with prices. For instance, under the Labour Government the buying power of the pensions fell by nearly 2s. 6d., compared with when they started.

Under the Conservative Government there has certainly been a change for the better. We have been able to do more than just make up for the rise in prices. Today the pension is worth over 10s. a week more in purchasing power than it was when we took over. I want to stress that word 'purchasing power' because what really counts, in the long run, is not the nominal amount of the pension but what it will buy in the shops. We have made the pension buy more. So we have already given the pensioner a share in the rising prosperity of the country. By our Manifesto we are pledged to continue to do that in the next five years. Nor have we forgotten the people living on their savings. We have given them special tax relief which must have helped them quite a lot.

If you look at our affairs at home today, as a whole, you will find that in recent years we have achieved two important things: full employment and stable prices. We've often had one or the other but never before both together. Prices have been pretty stable for the last couple of years. The cost of living index has been actually unchanged for sixteen months. Of course, some things go up and others come down and one's apt to forget the things that go down and only remember what goes up. It hasn't been easy to reach this stability. We had to do quite a lot of unpopular things to achieve it—the credit

squeeze and all that—but we've got there now and I hope we shall stay there.

At the same time, we have maintained full employment. It's true there was a slight increase in unemployment last winter. But considering that we had to meet the largest world recession in trade since the war, it has really been wonderful how little this country has suffered from that. And by the way, ten years ago—almost to the day—under the socialists, a less severe depression led to the devaluation of the pound.

Today, as I say, we have full employment. The national figure of unemployment is under two per cent. Of course, we all know that an average is only an average. In some places it's less than two per cent., in others it's more. There are the problems of the local pockets. But it's no good trying to deal with that by going back to inflation again. Our method is to take special steps to get new industries into places where they are needed. In fact, our first bill in the new parliament will be one to give us wider and more flexible powers to do this. That seems to me a rather more constructive idea than the first bill a Socialist Government would introduce—a bill to renationalize steel and spread confusion in a great basic industry.

In our eight years we have made some pretty useful cuts in taxation, but at the same time we have spent more on the social services—the young, the sick, and the old. How has that been done? I'll tell you. The answer is that the country is producing more and selling more overseas. Exports are at record levels. The pound is strong. As I said just now a new Government will be able to start with a lot of advantages. But don't make any mistake about this—things could easily go wrong.

If we go back to the old socialist system of controls, nationalization, extravagant expenditure and all the rest of it, we shall find that in a very short time we have lost all the ground we have gained. It's happened before and it can easily happen again.

What would happen next? Oh, I suppose that after a crisis there would be another election and the Tories would be sent for to clean up the mess. It might be more difficult another time. But, really, doesn't it seem a waste of time and effort to go all round that circle again? Isn't it much more sensible to go forward from the point we have reached?

Our Manifesto—we call it *The Next Five Years*—sets out plans for the young and for the old, for welfare, for expansion of every sort, at home and overseas; more technical colleges and technological development; more roads, more bridges, more hospitals, more slum clearance, and, of course, more schools. That is the home part. The overseas part is something which we must increase, too. We are already doing very well with investing in the Commonwealth and the underdeveloped countries—£200,000,000 a year, which is more than one per cent. of the national income. Our new prosperity gives us a new opportunity. This is both our interest and our duty.

We've gone through each item in our programme, which has been thought out very carefully. Each Minister brought me his plans, and, of course, a Minister always wants the most he can get for his own department. But the Chancellor of the Exchequer, Mr. Heathcoat Amory, who is a very cautious man, tells me that these plans are sound, and should be within

our capacity. Of course, we could have made bigger and better promises, but I'd rather be on the safe side and make sure that we promise nothing that we can't perform.

Compare our promises with those the socialists are making. In many respects I think they outbid us. They seem to have got a lot of money to spend—your money, of course. If you will take a word of advice from me, it is this. Apply the same test to those election promises as you would if you were investing your own savings. Don't be misled by the slick operator who offers you a chance to get rich quick. It is really better to stick to the well-established firms which are sound, and which can produce a balance sheet as well as a prospectus. In short, judge every promise by the test of past performance. And, of course, you are really investing your savings when you choose a government. How a government conducts our affairs can make a mighty lot of difference to them. And it isn't only your savings you invest: it's your whole future—and your children's, too.

I suppose that has never been more true than it will be over the next five years. The outside world is a very troubled place. It presents us both with difficulties and opportunities. The Government, any government, will have the best chance of seizing the opportunities if it can speak with the authority of a Britain whose economy is sound, and whose people have confidence in themselves. We've certainly found that to be true, of late.

Last November, when the Russians issued what amounted to an ultimatum over Berlin, I felt that we were in a dangerous situation and that we might even slide into disaster. In some ways it reminded me of 1914, when because of muddle, bluff, counter-bluff, and the lack of real contact between statesmen, we drifted into war.

That was why the Foreign Secretary and I went to Moscow in February. Of course, we have not yet solved all these problems. But at least we're talking about them, instead of threatening each other. We are now in an atmosphere of negotiation, not one of ultimatum. I feel confident that as a result of this visit, and the others that have followed, we shall be able to move to the next stage—a summit meeting.

We have got to tackle the difficult question of disarmament. The key lies in getting agreement on a workable system of control and inspection. If we can get agreement on the stopping of H-bomb tests—and I think we can—it will be a real milestone on the road. It will be a valuable advance in itself, and it will be the first practical experiment with international control and inspection. Much could flow from it.

In this election I am asking you to entrust all this work to me and my colleagues. That isn't because we are claiming any particular individual skill or experience, but we do have one big advantage. We have a united party behind us and we are all agreed on our aims. We shan't be looking over our shoulders all the time to see whether someone we suppose to be our friend is stabbing us in the back. You will remember that that was what Mr. Bevin, when he was Foreign Secretary in the Labour Party, was always complaining about.

Of course, I know that the Labour Party have patched over their differences for the pur-

pose of the election, but everyone knows—certainly everyone who's watched and heard them, inside and outside the House of Commons—how very deep the cleavages really are. This rift runs right through the Labour movement.

All this, both at home and abroad, needs a strong and a united government. I hope, too, that you will give that government a good majority.

I hope that what I've said, both about the future at home and about the tasks ahead of us abroad, will help you to make up your minds what sort of government you want in the next five years.—*September 26*

Ludovic Kennedy

THE SKIRMISHING, General Hailsham tells us, is now over and the real battle is about to begin. With trumpets and banners the two major protagonists have proclaimed the rightness and justice of their cause; so, before we all start groping about for convenient pieces of mud, and before all the main issues get totally obscured, let's just remind ourselves again of what politics is about.

It is, of course, about people. About their hopes and fears, and wants. And how the interests of one group often conflict with those of another. And what is the best way of reconciling them.

Well, tonight we're going to consider briefly the interests of three groups of people. First, people overseas—coloured people, people for whom we in this country are responsible. Many of them are uneducated and most of them are poor, but they all have one thing in common: a burning desire to decide for themselves, and among themselves, how they are going to be governed. Heather Harvey.

Heather Harvey: Well that means most of the people in the Commonwealth, of course. I've always been a firm believer in the British Commonwealth, and one of the most shattering things for me is the Conservative Government's record towards it. They're sacrificing it to the forces of reaction. They've let down everyone—not only here but all round the map. Look at Cyprus, for instance. We Liberals never stopped telling the Government that they'd have to negotiate with Makarios. Sooner or later—like it or not—they'd have to. If they'd only listened, how many lives would have been saved.

The Government had to climb down in the end, because they'd forgotten that people count. And now they're doing the same sort of thing in Africa. They can't get away from the idea that an African is a sort of child to be patted on the head, or given six-of-the-best, according to how they think it suits them. They're more out of date than Queen Victoria was a hundred years ago. She proclaimed: 'We are bound to the natives of our territories by the same ties of duty that bind us to all our other subjects'. They've gone back on their word to the Africans in the Central African Federation. There are nearly 7,500,000 Africans, compared with the 400,000 or so white settlers and other immigrants. And these people count. Federation was imposed on Central Africa against their will. The blimps say that opposition there was whipped up by a few agitators. It wasn't. The chiefs and headmen were all against it—as that great Conservative, Lord Hailey, told the Government at the time.

It's not just me, or even the Liberal Party, saying this, it's the men who know; who've actually served in these territories. The Africans were forced to accept a form of government they feared and distrusted, and what was worse, they were left without any way of making their views known. That is the root cause of the tragedy of Nyasaland.

Oh I know there was all that talk of a murder plot, but the Devlin Report blew that one sky-high. They said: 'We have rejected the evidence, such as it is, for the murder plot.' That was pretty blunt. No wonder the Government turned down the Report.

We've got to give the Africans their say in the way they're ruled. Don't think I mean that we should give up our responsibilities—far from it. We've got to live up to them. It's a far harder job. We've got to accept that we British can't be African leaders, and we've got to work for the leaders the Africans believe in. It's the Makarios story again—like it or not. These people count with their own folk, and we've got to work with them, or else fail. This means no colour bar in any of the things that count: the right to vote; the right to trial by jury; to have the education and the jobs they're fitted for.

If the Commonwealth is to survive it can only be as a free association in which all its peoples know that they count.

Ludovic Kennedy: People at home count, too. Parents, for instance—parents who want their children to have the best education the country can give them. Edward Rushworth:

Edward Rushworth: I am a teacher, married to a teacher; we've two children in a county grammar school. I want to talk about the needs of the children who are educated in our schools, and the teachers who educate them. Both require reasonable conditions to work in, but these don't exist everywhere. Three out of every five children are in overcrowded classes; these should be reduced as our first priority. And this means more classrooms and teachers. Again, many children attend primary schools below standard in buildings and sanitation. I think the Minister of Education ought to have to teach in one for a term. He would soon realise how urgent a primary school rebuilding programme is. All such programmes ought to take into account the size of schools. Children and teachers alike spend too much time, every day, walking round large, factory-like schools.

In secondary education we waste too much argument on organization. The curriculum is much more important. We think that we should concentrate on providing different courses or type of school for the different aptitudes of children. We therefore welcome all experiments, such as five-year courses, and secondary schools of different types. We consider that it is in this direction that real educational advance lies. Then—the secondary stage—we want to ensure that no child capable of higher education shall be refused the opportunity, either for financial reasons or for lack of places. We therefore opposed the means test for university and other higher awards, and want more money to be spent on buildings to house students and to teach them in. I would myself also like to see encouragement given to further education for all school-leavers at fifteen.

I have spoken so far about children, but there are also the teachers to be considered. Education needs dedicated teachers, but we'll not get them

until they are treated as a profession and not as servants; until they are allowed to concentrate on teaching, without having to do a dozen other jobs, and until they receive a proper professional salary. Liberals support all measures designed to increase the security and raise the status of the teaching profession.

Someone may ask—how is the money to be found? My answer is, we can afford to build weapons of destruction, let's spend less on them and spend it on the nation's future instead.

Ludovic Kennedy: People in the countryside—farmers and farm labourers, and all those whose work is connected with the land. What do they want and how can we best help them? Edwin Malindine:

Edwin Malindine: Most town people have a love for the countryside in the summer, but they don't always appreciate the difficulties under which country people live and work all the year round. Many people are without piped water, electricity, drainage, adequate transport, or hospital facilities. The wonderful summer has caused water shortages in many areas. Water is a vital commodity, and we should make more provision to store the rainfall and to link up with the rivers. In many areas like Wales, Devon and Cornwall and East Anglia, it's roughly estimated that we use and store less than ten per cent. of the total possible supply.

A farmer near Bude told me that he had seen plans, over thirty years ago, which were to bring electricity to his village. They are still waiting today. I addressed a meeting the other evening in a hall which was illuminated by two oil lamps. A farm worker there told me that to bring electricity to his cottage it would cost him £49, which he simply can't afford.

Another problem is schooling. Many children throughout England are deprived of secondary school education. In one area I know they have no secondary modern school, and a boy travels sixteen miles daily, into another district, leaving home at 7.30 in the morning and not getting back until 6.30 at night. Then, homework starts.

Transport is another problem—with infrequent or non-existent services. It may take hours to travel in some parts a journey of forty to

fifty miles. Greater freedom should be given to bus operators, and fuel tax reduced. On the railways small diesel railcars are required.

Employment is another problem. The countryside is being drained of its youth. Better road and rail communications would induce light industry to come to the countryside. And, of course, agriculture itself is still our largest industry, made up mainly of small family farms. Their vital need is capital, capital at a cheap rate to help modernize their farms and equipment. That is why Liberals propose to set up a Land Bank with the capital of £400,000,000. It would also help to give a start to the young man who has done his training in agriculture but lacks the capital to put his training into practice.

It's monstrous that in the year 1959—the nuclear age, the age of space travel, and landing on the moon, yet we can't provide the countryside with the elementary decencies of life. Liberals believe that given the will and the drive, we could easily solve these problems, and make the lives of our country people easier.

Ludovic Kennedy: And lastly a brief glimpse of a group of people who are very much in the news at this moment—the politicians themselves. It's sometimes been said that personalities shouldn't enter into politics, but very often it's the kind of personality that people are that determines the kind of policies they put forward. And nothing, I think, illustrates this better than the party television programmes of the last two weeks.

Many Conservative leaders are openly contemptuous of television. Indeed, some of them boast as though it were something to be proud of that they don't have a television set in their home. It's bad for the children; it stops all that interesting conversation. And because they've never bothered to learn how to use it, we have seen, lumbering across our screens, these last ten days, a succession of old party cart-horses, earnest, amiable, smug—and looking—let's face it—as though they've never had it better.

And what about the other side? All those bright, young, Public School Labour boys, directing non-existent operations from a non-

existent operations room. As entertainment value, of course, it's been splendid. Smooth, glossy, slick. But what they have omitted to say is, I think, rather more interesting than what they have actually said. No cosy little chats about the six hundred firms they're thinking of nationalizing; or the six million houses they're going to nationalize.

Last night they had Mr. Christopher Mayhew, the man who doesn't like television advertisements. There he was, whiter than white, peddling political half-truths as though they were some desirable new detergent. He told us that out of 293 Conservative M.P.s 148 were company directors. Too many, he thought, and so did I. But what he didn't tell us was that out of 277 Labour M.P.s 97 were Trade-Union-sponsored. H-mm. He also told us—and I dare say with his tongue in his cheek—that his party represented the whole nation and not just part of it. Mr. Mayhew, how many farmers are there in your party? How many small shop-keepers? And while we're at it, Mr. Mayhew, how many company directors?

We, as Liberals, would like to see rather more ordinary people in parliament, and rather fewer trade unionist officials and company directors. We would like to see the beginning of the end of class interest and class prejudices, and for people everywhere to realize that in industry there is only one employer in the end—the consumer. We think that co-ownership and profit-sharing are for a better deal for the worker, and for the employer, than nationalization—or, come to that, take-over bids.

We think it wrong that whatever people's incomes they should have to pay the same for National Insurance, for prescription charges; for council house rents. We believe that there are safer ways to peace than by holding an H-bomb in one hand and waving a Union Jack with the other.

What, in short, we are trying to do is build up a new kind of society—a Liberal society, if you like, a classless society. But we can only build it up with your help. On Thursday, October 8, you can give us your help. Will you? Think it over—September 29

The Visitor

After the sleepy throats of the first birds
Had creaked a madrigal into the sky,
A thin sun rose to separate the curds
Of sea, but my drab visitor stayed by
My bedside, and assailed me with the words
That had flailed sleep from me: though I still
fought.

Attempting flights today, or back to sleep,
The cobwebs in his eyes and on his coat
Moored all my life to him, till in the deep
Trenches of his dark language I was caught.

Rain followed sun: and on the wall outside
The flowers shuddered and shed sudden tears.
The room was bare: there was nowhere to hide,
Nowhere to go. He whispered in my ears,

Two shells filled with the memory of the tide:
'You are afraid. Often I've watched you run
Panting up blackened stairs, flight after flight.
On the next landing there was always one
Who made retreat. I bring your darkness light.
Meeting will happen by my changing sun.

'Name whom you seek. In me he will
appear.
Call me Nijinsky, and applaud my dance.
A rugger blue, and offer me some beer.
An editor: plague me for an advance.
Or think instead the one you love is here,
Her brown eyes happy, breathless from her
bike,
And very gently kiss, as once you kissed,

Or take me for your enemy, and strike
The mask I wear, and I shall not resist.
I shall be God, or anything you like.

'I shall be he whom you will never find,
Except in me: I am the last pretence,
Dark angel of the world, who moves behind
Dayfall, and whispers truth to innocence,
Hurting it into tears: yet I am kind.
Acceptance sleeps in light, abandoning there
The tedious climb, the fighting in the heart',
He paused and whispered: 'Else you must pre-
pare'
To ask me what gods or what kings depart,
And I shall answer, shadows on the stair'.

DOM MORAES

B.B.C. NEWS HEADLINES

September 23-29

Wednesday, September 23

Mr. Khrushchev visits farms in the State of Iowa

Engineering unions again put forward their claim for a forty-hour week and ask for an extra £1 a week in wages

Thursday, September 24

Mr. Khrushchev flies from Pittsburgh to Washington

An American rocket being prepared for the flight to the moon early in October explodes during a static firing test at Cape Canaveral

Two officers of the Joint Metropolitan and City of London Fraud Squad begin investigations into the disposal of moneys advanced by the State Building Society

Guenther Fritz Podola sentenced to death at the Old Bailey for the murder of Detective-Sergeant Purdy

Friday, September 25

Mr. Bandaranaike, the Prime Minister of Ceylon, is shot on the veranda of his house in Colombo. The Governor-General declares a state of emergency in the island

The Board of Trade appoints Mr. Neville Faulks, Q.C., to investigate the affairs of H. Jasper and Company, Limited

Saturday, September 26

Talks between Mr. Khrushchev and President Eisenhower begin at Camp David in Maryland

Mr. Bandaranaike dies in Ceylon and Mr. Wijeyananda Dahanayake, the Minister of Education, is appointed Prime Minister in his place

Sunday, September 27

More than 1,700 killed and 1,000,000 made homeless by a typhoon sweeping through Japan

Mr. Khrushchev broadcasts to the American people

Monday, September 28

Mr. Khrushchev arrives back in Moscow and makes a speech at the Sports Palace

Nomination lists for the General Election close, revealing that all seats will be contested and that there will be 1,536 candidates

Tuesday, September 29

Mr. Khrushchev leaves Moscow for Peking

Dr. Albert Schweitzer is presented with the Danish Sonning Prize

The Sultan of Brunei promulgates a new constitution for his country



Mr. Khrushchev photographed with President Eisenhower at Camp David in Maryland, during their talks last weekend



Mr. Solomon Bandaranaike, Minister of Ceylon, who died on September 26, from bullet wounds on him the day before by a Buddhist monk. Bandaranaike had been Prime Minister since 1956. For four years he had been Leader of the Opposition. In the 1930s he renounced Buddhism to become a Buddhist and advocate of Sinhalese nationalism and self-government for Ceylon.



A scene inside the reconstructed Guildhall at Plymouth during the opening ceremony there, which was performed by Field-Marshal Lord Montgomery on September 24. The new building replaces the Guildhall destroyed by German fire bombs in 1941



Breaking up whe



The General Election campaign: *left*, the Prime Minister addressing a crowd at Hyde in Cheshire on September 23 (he attended a mass meeting at Birmingham in the evening); *above*, the Leader of the Labour Party shaking hands with women shoppers after speaking at Harlow New Town in Essex on September 24, before starting his tour of East Anglia



week, made dry by the absence of rain, on New Barn Farm, near Wimborne, in Dorset



A detail from 'The Roe Deer Hunt', one of the four Devonshire Hunting Tapestries, dating from the first half of the fifteenth century. From tomorrow, three of these can be seen in a reopened gallery at the Victoria and Albert Museum in London. Since the tapestries were acquired by the nation from the Duke of Devonshire in 1957, one of them (now on show) has been cleaned and restored in the Netherlands

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Letters to the Editor

The Editor welcomes letters on broadcasting subjects or topics arising out of articles printed in THE LISTENER but reserves the right to shorten letters for reasons of space

The Beginning of Man

Sir,—In his opening talk in the series 'Man's Knowledge of Man' (THE LISTENER, September 1959) Professor Young gave a remarkably lucid and fascinating account of current views on the evolution of man, but he perhaps went too far in asserting that no doubt among scientists now exists 'as to whether man has evolved from non-human ancestors'.

The vital link, for the linguist at least, still seems to be absent from that long chain of logical evidence. I refer to the faculty of symbolization which distinguishes *Homo sapiens*, now as in the past, from all other creatures. Many gorillas, orang-outangs, chimpanzees, and gibbons of today certainly show non-human intelligence, and they have been taught to perform an ever-increasing number of marvellous tricks, but they all stop dead at anything involving the use of symbols. Even the most alert and sagacious of all these anthropoid apes have never yet been trained to interpret any kind of sign-symbol, however simply and intelligently they may have obeyed elaborate sign-signals of their keepers. It is the faculty of using and understanding symbols which makes man unique and that marks a clear distinction between the brains of man and beast.

Yours, etc.,

SIMEON POTTER

Liverpool

Sir,—In his otherwise most informative talk 'The Beginning of Man' Professor J. Z. Young is rather silent about the proper start of evolution, although by his choice of title this should be the very subject of his talk—the reason probably being that from anatomical points of view it is difficult, if not impossible, to decide where the animal ends and Man begins.

This is obviously a biological problem and its solution is to be found in the new scheme of evolution which was adopted by Primeval Man, which is diametrically opposed to the scheme of animal evolution.

It is the animal reveals by its bodily structures superbly adapted to nature, its evolution is governed by a principle which turns upon the body and its capacities as a means with which to implement adaptation to environment, e.g., developing offensive or defensive weapons. Man, however, when he managed to defend himself with stones, etc., and gradually perfected and improved the use of tools (instead of resorting to his bodily capacities)—that is to say, when he integrated tool-use into his evolutionary scheme—broke away from the animal scheme of body-compulsion and thereby started on such a scheme in which the trend and directional pressure of development switched from the body (and its restricted capacities) to the artificial tool (and its unlimited possibilities of development)—and this with the extraordinary evolutionary result of the new realm of technology arising 'around Man', that is, outside his body, with an ever-increasing number, variety, and range of technical tools and devices,

and of a corresponding disintegration of the body's original adaptive outfit leading to its present state of 'nakedness'.

His emancipation from body-compulsion makes it that even in his adult life Man preserves his infantile features as against the ape which on its scheme of body-adaptation develops the 'full characters of apehood'.

In his course of evolution Man also created 'mental' tools, the words as the basic elements of our language and the concepts as the basic elements of our conceptual thought or reason. To deal here only with the words, they are not, as it is commonly believed, a function of our speech-organs, but are artificial, independent things, that is, 'tools', and as such need not even be spoken but may as well be written or printed in which case they have no connexion at all with the speech-organs. Also the fact that there exist hundreds of different languages among men in spite of identical speech-organs shows that the words, although they are built up on the natural sounds of the speech-organs, are not 'functions'.

I very much agree with Professor Young when he says that 'the production of a memory record outside the body in the form of writing may prove to have been man's most decisive evolutionary change'. The phrase 'outside the body' (which figures prominently in all my former writings on this subject) is to my mind essential in this sentence, as it exemplifies Man's emancipation from body-compulsion and his developing, around him, a new artificial environment which is revealed in his technology and language as well as in the realms of pure science, morals, and aesthetics where inborn egotistic impulses and desires, tokens of body-compulsion, are apt to be superseded by an idealistic and altruistic attitude to life.

It is his unique principle of body-liberation which separates Man fundamentally from the animal. Therefore if we want to identify Early Man, we have to look for the absence of defensive weapons ('the full characters of apehood') in combination with the signs of upright gait. This combination makes it sure that the creature which was defenceless and yet walked erect must have persistently taken to the use of artificial tools, hence was a human being. This criterion would apply to the South African Pitheciinae which are marked as man-apes or as ape-men but at least should be classified as true Men of an early evolutionary stage.

Yours, etc.,

London, W.1

P. ALSBERY

School Curricula

Sir,—In the leading article of THE LISTENER of September 17 a phrase occurs that might be misleading. You quote a protest 'against the continued dominance of Greek and Latin'. A belief in such 'dominance' is common, but the facts are these. In 1958 there were 1,274,768 candidates in the ordinary General Certificate of Education; of these 44,163 offered Latin,

2,519 offered Greek. There were 177,524 candidates at the advanced level; of these 6,494 offered Latin, 1,465 offered Greek. Of those who were awarded State Scholarships 8.4 per cent. took classics (29.4 per cent. took modern languages). This is not dominance.

Yours, etc.,

Oxford

R. W. LIVINGSTONE

Sir Jacob Epstein

Sir,—I feel that Mr. Smart has misunderstood, though it may be my fault that he has done so, my use of the word 'literary' as applied to some of Sir Jacob Epstein's sculpture. I certainly did not intend that it should in itself bear any pejorative meaning, and, indeed, the fact that I mentioned Rodin as being a sculptor whose work was also inspired by literary ideas might have suggested that I did not think this in any way regrettable. But it is surely permissible to hold an opinion, as I ventured to do, about the relative merits of such ideas and of the various ways in which an artist may express them.

Yours, etc.,

Chastleton

ALAN CLUTTON-BROCK

Secondary Schools

Sir,—With reference to my talk of August 30 published in THE LISTENER of September 10: as a schoolmaster, I should like my colleagues to know that the title I had given it was 'Some thoughts on the Curriculum of Secondary Schools', and not, as it appeared, 'What is Wrong with Secondary Schools?'.

Yours, etc.,

Wilhelmshaven

JOHN SHARP

Bartók and the Piano Concertos

Sir,—May I take issue with Mr. Mason's statement about Bartók's Second Piano Concerto (THE LISTENER, September 10)? In his admirably lucid article about 'Bartók and the Piano Concerto' he states: 'When all three [concerti] are equally familiar it is probably No. 2, if any, that will be found not quite equal to the others'.

As possibly the only pianist who has played all three piano concertos as well as the early Rhapsody, Op. 1, many times, I think I am qualified to voice an opinion in this matter, too. Having played the Second Concerto alone some forty-odd times in the past ten years I feel certain that when everything is said and done it will be this one of the three concerti that will best stand the hard and crucial test of time, closely followed by the—for me—equally beautiful First Concerto. The Third, as Mr. Mason rightly points out, having lost some of its initial popularity, will, I feel, keep on losing its public appeal, while the other two will gain more and more as time goes by, and the world will appreciate and understand in an ever-increasing measure the great and unique genius of Bartók.

In the course of the many conversations I had with Bartók during his last five years in New

York (1940-45) we spoke often about the Second Concerto, which I was studying at that time prior to its first New York performance in November 1947, which I gave with the National Orchestra Association under Leon Barzin (the staid New York Philharmonic Symphony Orchestra having been unwilling to take the 'risk' of a new and untried Bartók work). Bartók himself thought rather highly of this work and believed in its final success strongly. The fourteen years which have passed since justified fully Bartók's trust in the Second Concerto.

Yours, etc.,

Bad Homburg

ANDOR FOLDES

Galileo—Traitor or Hero?

Sir,—It is distressing to see the great Galileo blamed by the communist Brecht for our present miseries because three centuries ago, at the age of seventy, he failed to withstand the primitive brain-washing of his day. It is an accusation which would appear to deserve scant attention, but as Mr. Fortuin (THE LISTENER, September

24) goes out of his way to give the conceit support and publicity, it seems only fair to the real Galileo to point out that the figure created by Brecht has very little resemblance to him.

Brecht's play is a series of episodes precisely dated and in appearance the result of sober study of the record. In fact, the Galileo presented is almost entirely fictitious, from the start when he is shown as hiding his knowledge of the Dutch telescope and passing the idea off as his own (in letters and in print the real Galileo openly stated that his impulse had been the report of the Dutch invention), through scenes where his daughter Virginia dances with her fiancé at a ball in Rome (she took the veil as a child and never left her convent) and Cosimo de Medici refuses to accept a copy of his great book (Cosimo died ten years before it was printed), to the end where Virginia stands over him to see the manuscript of his last work go page by page to the Inquisition.

It is not easy to see why Brecht found it necessary to depart so far from reality. The facts

of Galileo's life are well known and readily accessible. But it is fantasy to believe Brecht's invented figure demonstrates that the real Galileo was evil and directly responsible for our own atomic nightmares.

Yours, etc.,

Wallington

MICHAEL KELLY

The 'Great Eastern'

Sir,—I was interested in the talk 'The Great Eastern', under the heading 'Did You Know That?' in THE LISTENER of September 24. At the age of eleven I spent some weeks in the summer of 1890 in the Island of Arran. From there, with a number of friends and relations, I had a clear if somewhat distant view of Brunel's great ship. We could see quite clearly the huge paddle wheels and count the six masts and five funnels. She was on her way to Clyde to be broken up—not to the Mersey as stated in your article.

Yours, etc.,

Cambridge

W. BALFOUR GOURLA

The Behaviour of Dogs

By F. R. BELL

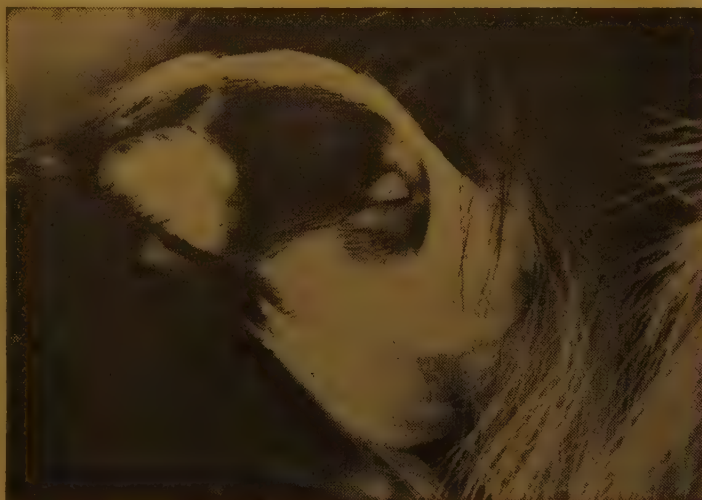
MOST dogs kept as pets have become so dependent upon their owners that the owner now represents the most important thing in the dog's world.

Thus the owner's behaviour shapes the dog's behaviour. This relationship between man and his dog has become so close that some dog owners believe that their dogs can think and reason like human beings. Of course this is not so, although dogs and men, or at any rate dogs and babies, may show certain similar basic patterns of behaviour.

I think it is as well to remember that the dog's sensory capacity is very different from our own. Dogs have poor eyesight and cannot recognize stationary objects even at short distances, although they have a better appreciation of moving objects. The hunting dog may lose his quarry if, for example, the hare 'freezes' to blend with the landscape. There is, moreover, a variation between breeds of dogs: the long-faced types like the greyhound and borzoi see more than the flat-faced types like the retriever and labrador, because of the position of their eyes. Furthermore, dogs are not only colour blind but have little depth of vision to allow them to see scenes in depth or in perspective. A dog's visual world compared to our own is almost as different as a black-and-white photograph compared to a stereoscopic colour-film.

The sense of smell is well developed in dogs, much more so than in man, and there is no doubt that smell provides the dog with the closest link to his immediate surroundings. Even with this sense the dog has been credited with more prowess than he really possesses, for a number of careful experiments have shown that dogs are extremely variable in their ability to

follow trails by smell alone. I am sure that the dog's most acute sense is that of hearing, and that this basic sense is aided and reinforced by his other senses. Dogs hear a larger range of sounds than do humans, which explains the use



Shetland sheepdog puppy being suckled

of certain whistles that are audible to dogs but not to men.

The behaviour of the dog, like that of any other animal, can be reduced to the simple notion that a response, or pattern of behaviour, must be brought about by some definite cause or stimulus. A stimulus, therefore, induces a response, and the stimulus may affect the animal from the outside through its sense organs, or it may affect it from within its own body. For example, the smell of food can cause a dog to stir itself, get up, and walk about in order to search for the food. The smell is the stimulus which induces the behaviour pattern of searching. Equally well, after a period without food

when the level of sugar in the blood is low, sufficiently, the dog's stomach will develop rhythmic movements, known as hunger contractions which will also cause him to up and seek food.

Dogs show a pattern of behaviour that unfolds and develops as they grow older and become mature. For the first two weeks of its life the puppy is blind and deaf, and is protected and insulated from the outside world by the nursing activity of the bitch. The puppy at this stage shows only a series of rigid inborn reflexes which it works on a trial and error basis mainly to gain nourishment, for when it makes contact with the teat it is able to extract the milk by reflex suckling stimulated by the presence of the teat between its lips.

At the end of the second week of life, the puppy's contact with the world around it increases tremendously, for it can now see, hear, and walk, thus increasing the number of stimuli which can act together to evoke characteristic dog-like responses.

For example, a loud noise or a rapid movement produce the immediate adoption of a crouching posture with the tail tucked in. This posture is held only momentarily before the animal runs away sideways, yet still listens. While so young the puppy shows no ability to learn, which may be due to the fact that at this stage the brain and nervous system are still developing and have not reached the necessary stage of maturity. Study of the activity of the brain in puppies with the electro-encephalograph 'brain waves' at this stage reveals a juvenile type of wave form, rather like that recorded from human infants but unlike those of an adult dog.

Will Julian help?

Dear Julian,

Since Mother took to 'understanding' me, you're the only one I can turn to for unwelcome advice. Give me some—or rather, no don't. What I need now is your skilled diplomacy. (Or a ticket to the Belgian Congo. It's long past closing time, and I feel melancholy and muddled.)

One day last week I ran into Lydia again, parking a miniature bubble-car hard by the Rose & Crown.

You must remember Lyddy. She was the one before the one before Polly and permanent respectability. Years ago. I thought I'd forgotten . . . Ah me. I gave her a mild fizzy drink while she told me how happy she is—i.e. bored and frustrated—with some great muscle-bound reactionary called George Bernard, and their seven young. It was mournful yet compelling, like a T.V. housewife describing a synthetic sandwich-spread.

I'm nothing if not intuitive, as you know. I saw her trouble in a flash. So much going on in the world, so little to talk about . . . sheer idea-starvation, lack of mental enzymes! Up to the axles in small beer. *I had to do something*—so the minute she'd waved goodbye I whipped round the corner to the newsagent and ordered her The Observer, free gratis, for a year. Brilliant. Well, wasn't it? Dam thoughtful, too.

Wallop! She writes back at me in such shocked and how-could-you terms, good lord you'd think I'd tried to break into the house at night! My letter torn up, my motives examined . . . Her George B. suspicious and offended, swearing at breakfast, demanding explanations . . . (Seems *he* always orders their frightful newspapers and fobs *her* off with Sunday comics!) Now I jump whenever the phone rings. These violent, jealous characters, you can never tell what they'll do. And I speak from experience . . .

Is it true, Julian, that you actually know him, this Bernard? Lydia said so. Couldn't you get him on one side and point out (tactfully) that I'm saving his marriage for him? It might help. Where would Polly and I be, every Sunday morning, if there wasn't a ring and a thundering crash and

THE OBSERVER

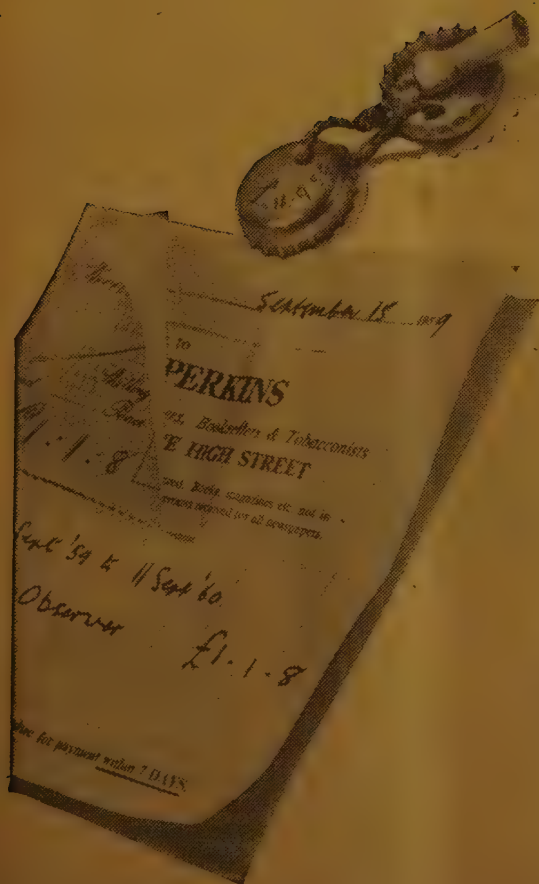
lying clean and glorious on the mat? Well, where?

You could develop the theme irresistably—child's play for a Q.C. Say I'm an old family friend of Lyddy's . . . with a weak heart . . . and a wise, generous mind . . . primed by Pendennis, tuned by Tynan, combed by Crankshaw, brushed by Brasher, etc. Tell him it's Independent (the Ob.). Talk about the Election. Say you'll introduce him to the Editor. Tell him Top Thinkers take it. And write to

Your uneasy brother,

James

P.S. Nearly forgot . . . I did pop a couple of squibs in the Agony (Personal) col. of the Obs.—for good measure. (See last two weeks.) Couldn't be that, could it? The disguise was complete.



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The period between the first three weeks of life until about the twelfth week is of immense importance, for it is during this time that the puppy gains its experience of the outside world and develops its own individual behaviour patterns. From the psychological point of view the puppy's reactions are malleable and sensitive to outside conditions at this stage of its life. If during this period puppies are reared in the open, out of contact with humans, they become just like wild animals and show either fear or aggressiveness on meeting people. After twelve weeks it is almost impossible to establish a close, easy relationship with such animals without much effort, which may entail complete retraining. If, on the other hand, puppies are raised individually in small cages away from other dogs, this restricted environment gives the animals no opportunity to learn from the physical or social world. After three months, therefore, although physically normal they are completely inexperienced and are unable to adjust themselves properly either in competition with other dogs or with problems in the outside world.

During this malleable period the dog, by learning, adapts itself to its environment—that is, it establishes a set of reactions to certain stimuli. The more frequently the dog meets the situation the more established becomes the behaviour pattern. If during this period it meets a cat and in investigating this strange animal it is scratched on the nose, it is likely that from then on it will treat cats with the greatest respect for it now associates a cat with pain. If, on the other hand, the cat runs away and

the dog is allowed to give chase, it is likely that the dog will become a cat chaser; for now cats provide a stimulus which sets in train the aggressive chase behaviour of the dog.

Pavlov, the famous Russian physiologist, studied this learning process in the dog. Pavlov investigated the simple reflexes, such as the promotion of salivation, by showing the dog a piece of meat. By continuously presenting a second stimulus such as a flash of light or a ringing bell, he was able to show that the secondary stimulus was able to induce the same response, salivation, as the first or primary stimulus. Rattling a dog's bowl or plate will usually cause excited anticipation.

In house-training a dog this process of learning is used, for the owner makes certain that the puppy is allowed to urinate or to defaecate only in the proper place, usually outside the house. Eventually, by the strength of his learning, he becomes so habituated that he is completely inhibited with regard to urinating or defaecating indoors.

In learning, the animal may try more than one type of response but will eventually select the one that allows it to deal best with the situation. For example, if a dog needs to get to the other side of a fence he may either try to jump it or may search right and left for a suitable opening. One or more repeti-

tions of a successful attempt may be necessary before he learns the best solution to his problem. Once an animal has started to learn, then success is more or less assured; for when it realizes that a reward is forthcoming, or it can avoid punishment, or frustration, for a certain response, it will work much harder in order to get its own ends. It is possible for a dog to learn from a single lesson, especially if the stimulus is powerful—say, the painful scratch of a cat.

Much experimental work has been done to test whether behavioural abilities are inherited in the dog. Most of it has been carried out in America where a 'school for dogs' has been set up and the inmates are tested at regular intervals for various characteristics such as timidity and aggressiveness. The pure-bred Basenji showed



'Guilt' after eating jam tarts

Photographs: Jane Burton

maximum timidity, while the first cross with the cocker spaniel attained about the same score, indicating that timidity is a dominant characteristic which can be transmitted to the offspring.

By breeding it is possible either to breed out undesirable characteristics or to select the desirable characteristics. The characteristic crouch of the cocker spaniel, particularly if threatened, was established in the breed by selection. In the Middle Ages spaniels were used to find birds in the grass and to crouch down as soon as they had done so, in order that the net thrown to entangle the birds as they tried to fly away could pass over the dog. Dogs which were able to crouch and remain still were favoured by the breeders and used to establish this behavioural characteristic in the breed. The modern breeding of cocker spaniels for show points has played havoc with this pleasant breed of dogs from the intelligence point of view. Selective breeding of working collies is a good modern example of the hereditary transmission of the ability to learn.

If a dog in its early life has been prevented from adapting itself to ordinary situations then later in life this can cause trouble, especially if it is strongly stimulated and cannot escape from the situation. The common result is that the animal is either excessively aggressive or excessively timid. Timidity is most often due to a

fear of human beings, and can usually be overcome by quietly but firmly showing the animal that he has nothing to be afraid of and that he need not run away. Aggressiveness in adult dogs is often due to the fact that they were encouraged to bite and growl, perhaps playfully, when they were puppies. A dog that is never encouraged to fight as a young puppy forms a strong habit against fighting. The best method of controlling fighting is restraint rather than punishment, since pain itself is a strong stimulus to fighting. Dogs that suddenly become aggressive, often towards their owners and their families, may be acting from frustration. Perhaps a new baby or a new car has diverted attention which has become essential to the dog. If a dog is placed in a frustrated situation repeatedly it is possible

for him to become neurotic and to show obvious nervous symptoms. On the whole, however, nervous symptoms are associated with organic nervous disease, and any dog showing such signs should be examined by a veterinary surgeon.

If a dog is confined but can see free animals or human beings it will often develop some type of stereotyped movement as a sort of substitute activity. It may run in small circles chasing its tail, or bounce from one side of the kennel to the other.

The behaviour of the bitch to her young is probably entirely instinctive, and is dependent upon stimuli generated from within her own body by the hormones that are produced by the endocrine glands. Because of these, the virgin bitch following a 'heat' period will sometimes accept any small object such as a bone or

a doll and begin to nurse it as it would do a puppy. Hoarding of food in dogs also appears to be an innate act, and it may also be controlled by internal hormones.

Emotional expression does occur in dogs, and was first studied in detail by Charles Darwin. The threatening posture is well known when the ears, tail, and hair of the neck are all erect and bristling, and the teeth are exposed by the retracted lips. This posture has its antithesis in the submissive animal. These postures have their own peculiar sounds associated with them so that the emotional state of the animal is radiated to other dogs by the ear as well as by the eye. The emotional state is often accompanied by the exudation of odours from the glands associated with the genitalia. Sexual receptivity in the female is indicated to other dogs by the exudation of odour. Dogs communicate with other animals mainly through the sense of smell but also by sight and hearing.

Man has the ability to foresee and regulate the environment of his dog, so that it is not often confronted with a situation causing uncertainty. Beware of reading feelings into the dog that really are your own reactions to the situation. That so-called guilty look: could it be his reaction to your change of demeanour rather than his possessing a human conscience and human standards?—From a talk in *Network Three*

The Wide Range of Romanesque Art

C. R. DODWELL on the exhibition at the Manchester City Art Gallery

THE placing of the Bury Bible at the entrance to the present exhibition in Manchester* is a masterly stroke. It draws one immediately to the centre of English Romanesque. The large painting in this manuscript confronting one at the outset, which was made by Master Hugo in the first half of the twelfth century, expresses in its rich colours, its monumental power, assured poise, and other-worldliness the very essence of Romanesque.

This splendid entry is immediately sustained, for the Bury Bible is one of a group of the famous English giant Bibles of the period which, presented in two sections, form the axis of the exhibition as a whole. The large pictures are all excellently displayed. Their large size relates them to wall-paintings of the period. The glint of gold-leaf reminds one of the medieval affection for goldsmiths' work. But it is for themselves that they are chiefly important. Here is a small group of paintings and drawings that, for sheer artistic quality, should attract anyone interested in the visual arts. And, at the same time, they express the various aspects of the Romanesque spirit: its brooding mystery in the sensitively portrayed picture of St. Matthew in the Dover Bible; its clarity, assurance and dramatic impact in the large drawing of the Winchester Bible; its linear vivacity in the Lambeth Bible; its monumentality in the unique picture of the scribe in the Canterbury Psalter, which rightly finds its place alongside the giant Bibles. It was a remarkable achievement to assemble these as the centre for the exhibition, whose full resources are deployed around—illuminated manuscripts, bookbindings, sculptures, wood carvings, ivory carvings, embroideries, enamels, and metalwork. There is certainly here a cross-section of the Romanesque arts as a whole.

Very naturally, the illuminated manuscripts are given a good showing, for they have survived in greater numbers and in better condition than the other arts. They comprise important and characteristic works of the period, including the illustrated *Terence* from the Bodleian with illustrations derived from classical sources but now transmuted into something taut and typically Romanesque and far removed from styles of the classical period. Among other significant works one can see the impressively hieratic Virgin and Child of another Bodleian manuscript, the spiritually refined Crucifixion of a Corpus manuscript, the massive figures of a Cambridge *Boethius*, the assured illustrations

of a *Bestiary* from the same collection, and the richly coloured pictures of the York Psalter and Pembroke Gospels.

The wide span of the exhibition as a whole is punctuated, as it were, by the stone sculptures which are spaced around. They have been lent

Romanesque, from the delicacy of the head of a Tau Cross and the exuberance of a St. Alban inhabited scroll on the one hand, to the nobility of a carved Ascension and calm serenity of a Christ in Majesty on the other. The ivory chessmen, lent by the British Museum, illustrate how

independent of techniques and dimensions is the art-feeling of a given period for, though only about four inches high, they have all the monumentality of large-scale stone sculptures. The figure of a King from Dorchester reveals in a very realistic way how firm are the stylistic relations between crafts such as these and manuscript painting.

Embroideries and enamels lend colour to this part of the exhibition, which is rounded off by an admirable section on metalwork. Here again the range of Romanesque art is well illustrated with a forceful lion's head and the boldly rendered sleeping soldiers at one end of the scale and the poignant Christs on the Cross at the other. One is reminded that this is not only the period of the Crusades but also the time of Saint Bernard and a new tenderness of sensibility. The metalwork is all of high quality and includes such items as a silver chalice and paten from Canterbury, decorated in a style similar to that of contemporary manuscripts, and an elaborate censer top symbolizing the Holy City seen in the Book of Revelation. The ending of the exhibition is as appropriate as its beginning. We have come full circle, for Master Hugo, the painter of the Bury Bible, was also a metalworker.

By skilful selection, this splendid exhibition conveys the varying aspects of Romanesque—its impact and power, its sensitiveness and spirituality—and registers the quality of the art of the period. Only among the earlier illuminated manuscripts is there any real weakness; presumably examples of Anglo-Saxon

Romanesque, such as the Hereford Troper and Tiberius Psalter, and the important Carleif books of the post-Conquest period were not available to replace one or two of the earlier manuscripts, which are artistically inferior. If one is to be critical, the only other comment is that the seasoning of the exhibition with those examples of Continental Romanesque that happen to be in this country leads occasionally to the feeling that the wrong condiment has been used. This is more particularly so with the wood-carvings, which seem to act neither as a foil nor as a pendant to the English work. But, when one is offered a banquet, it is churlish to comment on one of the sauces.



Detail from the Bury Bible

by various authorities in the country and are, of course, primarily capitals and corbels. Among them is a particularly tender composition in stone from Hyde, as well as another sensitively carved capital from there. Elsewhere, a head of Christ, though much weathered and damaged, still conveys much of its former power. It is a similar tribute to the artistic standards of the period that, among the carvings in bone, a mutilated figure of Christ which lacks both head and feet can still impress one with its superb quality. Most of the ivories are, in fact, in good condition and they have been carefully selected to convey the varying moods compassed by

The Listener's Book Chronicle

Meeting With Japan

By Fosco Maraini.

Hutchinson. £2 10s.

Reviewed by JOHN MORRIS

AUTOBIOGRAPHY AND SCHOLARLY INFORMATION do not normally mix well, but this long and rambling, but immensely readable, book is an excellent introduction to the complexities of Japanese life. Those unacquainted with the country may perhaps feel that the overall picture which emerges is inconsistent, and indeed a number of queries are not resolved. This however is not the author's fault; it is a peculiarity of Japan that the longer one lives there the more incomprehensible do some aspects of it become.

Signor Maraini is eminently qualified to interpret the Japanese way of life. He was teaching there before the war and being a naturally good linguist soon acquired a considerable proficiency in the language. He has travelled widely in the Far East and was moreover a pupil of Professor Giuseppe Tucci; one of the greatest of modern orientalist. When Italy signed the armistice he and his family were interned and, because they had formerly been allies, were treated with exceptional brutality. The experience did not in any way embitter him. Indeed the years of incarceration, which he used to increase his linguistic knowledge, seem in some ways to have made him more Japanese than his captors. I do not believe, for instance, that any normal European when accused of lying would have chosen to prove his innocence by immediately chopping off a finger and throwing it in the face of his gaolers, but Signor Maraini, with his knowledge of Japanese psychology, was convinced that it would have the effect he desired.

He has returned since the war, and although he tells us a great deal about the changed conditions his real interest is concerned with the past and the traditional. He knows about Japanese art and architecture, and the many descriptive passages he devotes to these subjects are the best in the book. Signor Maraini is, however, so steeped in the classical Japanese aesthetic that he is, in my opinion, wilfully unfair to some aspects of modern life. His condemnation of the *Ni-sei*, the American-born Japanese, for example, is far too sweeping. 'They have thrown their own civilization overboard', he notes, 'and all they have taken over from the new is a superficial indifference to everything, an arrogance that they mistake for cordiality, a shameless interest in money'. He might have added that the *Ni-sei* Brigade in the United States Army fought with outstanding gallantry in Italy, and that many of them proved almost indispensable during the years of occupation.

Signor Maraini stresses, and rightly, the importance of understanding the various cultures of the world. But 'if we realize clearly', he writes, 'that within the borders of the exotic we shall meet with profound differences, it is true, but these can be overcome, not by translating thought, which is a waste of time or at best a crude approximation, but by re-living from the inside mental universes which were built up from foundations entirely independently of each

other'. It is perhaps because he himself has acquired this rare empathy that some of his arguments may seem unconvincing to readers without his gift of understanding. Nevertheless the whole book is crammed with acute and stimulating observation and nobody can fail to extract both pleasure and profit from reading it. The translation, by Eric Mosbacher, is smooth and idiomatic; and while the many black and white illustrations (mostly from the author's own photographs) could hardly be better, those in colour are of a crudity no longer tolerated in any country other than this.

Madame Blavatsky: Medium and Magician. By John Symonds. Odhams. 21s.

The difficulty of writing a life of the formidable Helena Petrovna Blavatsky, apart from deciding whether she was a fraud or not, is the lack of authentic material. About her earlier life, with its elopements and bigamous marriages, she was understandably reticent. As for the second half, very little reliance can be placed on the accounts of her followers, who apparently took all her mumbo-jumbo at its face value. Altogether, it would be hard to say which are the more repellent: the addicts of spiritualism or the grotesque and obscene manifestations themselves, which seem to have such a fascination for Mr. John Symonds, the biographer of Aleister Crowley and now of Madame Blavatsky with her great billious yellow face and enormous staring eyes. One is, in fact, never quite sure of his attitude. For though at one point he seems to dismiss her as 'one of the world's greatest jokers', his general standpoint would suggest a reluctant and ironical admiration.

Certainly H.P.B., as she was known to her followers, never lacked courage or resource. But she was by no means 'spiritual' in the accepted sense. She swore like a trooper, smoked incessantly, guzzled till the fat hung in bags on her arms and legs, was subject to wild, uncontrolled rages, and used people as ruthlessly as any politician. She thought nothing of levitating her seventeen stone up to the chandelier in the ceiling to get a light for her cigarette and kept up a constant correspondence with her Secret Masters in Tibet by psychic post. Their replies, apparently, floated through the ceiling and might be found anywhere at any time, under the table or on top of a cupboard, or their letters might simply materialize in one's hand. Perhaps the most interesting thing about H.P.B. was her method of work. She had no need of libraries, we are told, though a book like *Isis Unveiled* is packed with obscure references. She simply materialized any book she needed to consult and then de-materialized it when it was no longer needed. The perhaps too credulous Colonel Olcott, co-founder of the Theosophical Society, adds that she often appeared to be copying from a book held invisibly in the air before her. But then H.P.B. said that she could make her 'chum' believe anything she liked merely by looking at him.

Mr. Symonds suggests that she wrote under the influence of hashish. But however much

hocus-pocus she indulged in to impress other people, her fanatical dedication to her work and beliefs does indicate a sincerity of purpose. When, in the last years of her life, she was so swollen with dropsy that she could hardly roll out of bed, she would start work on *The Secret Doctrine* at six in the morning and continue often without a break until seven in the evening, an application that any museum reader might envy. It was understood, of course, that she wrote at the dictation of the Masters and was simply a 'vehicle'. According to the Society for Physical Research, which published a lengthy report on the activities of the Theosophical Society, Madame Blavatsky was 'one of the most accomplished, ingenious and interesting imposters of history'. Yes, but was she *only* that? One has the uncomfortable feeling that she was a good deal more.

PHILIP HENDERSON

The Art of Radio

By Donald McWhinnie. Faber. 21s.

There has been very little written about radio as an art form and any book on the subject is therefore welcome. This book is particularly welcome because it is written by a practising producer whose work has just been honoured by the award of an Italia Prize. As it doggedly champions the medium it is timely because there is now a body of opinion which needs persuading that radio is developing an art form in its own right and is worth the money spent on it. A definition of a work of art that depends for effect upon a series of images which need to be heard rather than seen on a page, has troubled most of those who have tried to write about radio.

Mr. McWhinnie is no exception. Grappling with definitions and using terms from other forms of artistic expression which never quite describe the essence of radio form, he is sometimes tortuous in the opening chapters. When he starts defining by using examples from his own work his exposition is much clearer. Like Arnheim he appreciates the value of silence and considers a radio work to be more like a musical composition than a blind stage play or a recorded play reading. Now that technique is capable of supplying almost any sound effect that is required the producer is spared the chore of hunting for individual effects and can concentrate on creating a total shape.

This creating of a total shape needs a mind both poetic and musical, and it would seem that the future development of the radio art will be in the hands of musical-literary producers who are able to blend the contributions made by composers and writers of dialogue. Though radio has fostered many writers and has even made its influence felt on the stage, its future does not lie in purely literary hands. Mr. McWhinnie illustrates this point when he deals with the production problems he faced when he created Mr. Samuel Beckett's *All That Fall* and Mr. James Hanley's *The Ocean*. A study of the bare scripts hardly gives more than a hint of the eventual impact which was achieved and which was derived from Mr. McWhinnie's handling of the effects. Some listeners may have disliked

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is treatment of the two plays mentioned above, and indeed the author seems to feel that *The Peers* was a partial failure. He is right to assert however that it was also a partial success and that it would not have been done at all if the Drama Department did not exist or if the Corporation had bowed its head to mass demands. Mr. McWhinnie makes it clear that the medium's potentialities are at last ready to be fully explored. Though some radio writers may feel that the exploration should not be too completely in the hands of the producer, they and anyone else who still believes in radio's possibilities will find this book an excellent text for discussion. Since Arnheim there has been nothing as good and nothing so devoted to a cause which is far from lost.

IAN RODGER

The Novels of George Eliot

By Jerome Thale.

Oxford, for Columbia University Press. 30s.

In an age of Brontë sentiment, when women were expected to show a charming intellectual helplessness, George Eliot was endowed with the mind of a double first. The art of the ancients was as much her province as the future of German philosophy; she wrote learned articles on Romantic music, and translated Feuerbach's *Essence of Christianity*. It is true she could also make damson cheese and fall in love like any normal woman; but she remains to us more intellectual than feminine, and Herbert Spencer probably expressed the general attitude of her contemporaries when he called her 'the most admirable woman, mentally, that I ever met'.

Such academic distinction is both an advantage and a millstone to a novelist; and, as Mr. Thale confesses, George Eliot's style, at its worst, 'can be ponderous, overlearned, excessively self-conscious in the manner of the heavy-weight reviews of the age': it recalls 'the persona used by the nineteenth-century reviewer—authority, learning, finality of judgment'. Yet the virility of George Eliot's mind also enables her to impose a unity on her work: to strip it of irrelevant detail, and 'to escape from vagueness and inaccuracy into the daylight of distinct, vivid ideas'. It is a world in which Flaubert, the Goncourts, and Zola would be at home. It is, one must admit, a world into which few women novelists could enter.

George Eliot is not concerned with the fluctuations in public values; she is not chiefly concerned with society. The world, to her, is the setting for her characters, 'the matter in which and out of which they work out their own fate'. She is chiefly interested in character, or, to be precise, in the development of character; and it is Mr. Thale's contention that her works retain their power to engage us deeply because they concern themselves with character in its social embodiment, as it discovers value through other people and society'. This thesis is not, perhaps, strikingly original, but I think Mr. Thale substantiates it well. Novel by novel, he takes the characters, holds them up in the sunlight, and gives us distinct and vivid interpretations; and he gives us *leçons expliquées* which very usefully illuminate George Eliot's style. The novelist with an almost Flaubertian regard for form shows, at times, a delicate symbolism that would do credit

to Proust. How finely she charges the pictures, the very furniture, with changing significance as she notes Dorothea's visits to the boudoir in *Middlemarch*! Small wonder that Proust was impressed by her use of memory. And how subtly she fuses analysis and description! There is a delicacy about George Eliot, at her best, that leaves the author of *Jane Eyre* far behind.

It is unfortunate that Mr. Thale does not have time to discuss 'the interesting lesser points' like George Eliot's studies of the rise of industrialism: his work might have been more widely acceptable had he broadened his scope and, perhaps, been less clinical in style. But if Mr. Thale may be criticised for excessive sobriety (and, I think, for the absence of a proper bibliography), the more academic reader may still be grateful for this diligent tribute. It reveals George Eliot as a pre-eminent Victorian and yet as a woman much in advance of her age.

JOANNA RICHARDSON

General Graham Lord Lynedoch

By A. Brett-James. Macmillan. 36s.

Like so many of the generals in the war of 1793-1815 Graham was a Scot. But unlike them he did not join the army until he was forty-six—raising the 90th Foot in the spring of 1794. It was fifteen years before the Duke of York agreed to allow him permanent rank or to promote him. Yet when he retired in June 1814 he was a lieutenant-general and a peer.

In 1774 the laird of Balgowan married Mary Cathcart, whose beauty Gainsborough immortalized before she died at Hyères in 1792. The next year Graham, always an eager traveller and now concerned to get rid of the melancholy shrouding him since Mary's death, seized a chance to travel out to Gibraltar. There he met Colonel John Moore and went aboard Admiral Hood's fleet. When Hood occupied Toulon at the Royalists' request, Graham's command of French—and he already spoke two other languages—made him invaluable as a civilian aide-de-camp to the commander, Lord Mulgrave. When in addition he led an attack both intelligently and bravely Mulgrave urged him to become a soldier. His decision to do so was no doubt influenced by his enjoyment of the action at Toulon, perhaps by Moore's example and certainly by his hatred of the French revolutionaries—for on its sad way home through Toulouse Mary's coffin had been forced open by National Guardsmen searching for hidden arms.

Graham wanted action. So when the 90th sailed for garrison duty on Gibraltar their colonel went instead to Venetia as a liaison officer with Würmser's unfortunate army. He only rejoined his regiment when he knew that it was sailing for active service on Minorca, then on Sicily and Malta. He was disappointed to be away on leave when the 90th fought at Aboukir but not at all sorry to quit them when in 1804 they sailed to the West Indies.

Graham had admired Moore since they met on Gibraltar. He was happy, therefore, to serve as Moore's aide on the futile expedition to Sweden in 1808 and on the famous expedition to Portugal later in the year. The retreat to Corunna that killed Moore brought Graham promotion and, after a fever-dogged command on Walcheren, he returned to the Peninsula in 1810. A sortie from Cadiz and a sharp, successful encounter with the French at Borrosa, made

him famous in a Britain starved for victories. Graham was knighted—'I think my Zeal is already overpaid' was his typical and genuinely meant comment—and then appointed second in command to Wellington. Together the Scot and the Irishman—Graham's junior by twenty years—fox-hunted and fought from Ciudad Rodrigo to Salamanca. After nine months at home because of eye trouble Graham rejoined Wellington in the spring of 1813, advancing with 'the Peer' across the Douro and on to command the bloody assault of San Sebastian. Graham organized the crossing of the Bidassoa in October and then left for England—but not to retire until he had led another expedition abroad to help the Dutch against their retreating French masters.

Indefatigable in war the general was hardly less active in peace. An improving landlord, the founder of the United Service Club, hunting still at seventy-nine, a devoted traveller (when seventy-one he drove from Stockholm to Moscow and Vienna, when eighty-two he visited north Italy), the many years before he died in 1843 when fully and happily occupied. 'He is one of the men', wrote an acquaintance, 'who make old age lovely'.

Graham's character and the excitement of his career emerge with some difficulty from a long book (368 pages) which contains far too much 'and Times' cluttered about the 'Life'. With pruning this book would have been greatly improved for the general reader—and it might then have borne a more reasonable price. The scholar is likely to be irritated—not least by the absence of references to the many sources (some of them new) which the author has conscientiously unearthed.

M. G. HUTT

How You Got Your Name

By James Pennethorne Hughes.

Phoenix House. 9s. 6d.

One of the minor pleasures of life is to stroll round an English country town after dinner and to observe the strange names over the shops. East Anglia is particularly rewarding in this respect. There are well over 100,000 different surnames in Britain, many of them still highly localized and peculiar to one small region. The study of surnames is a perfectly proper and serious one, but like so much else on the fringes of local history it has often attracted ill-equipped amateurs and has been somewhat degraded as a consequence. Back in 1931 Mr. L'Estrange Ewen published the most comprehensive and scholarly study of British family names. His book is very difficult to obtain, and a shorter guide now comes to hand in Mr. Pennethorne Hughes's book.

Mr. Hughes draws heavily on the best of the earlier writers for his useful and entertaining study of the subject and covers a great deal of ground expeditiously. It is difficult to criticise an author with such limited space for so large a subject, but Mr. Hughes possibly gives too much room to surnames derived from places (the most numerous class of all, but also, as he says, the dullest) and not enough perhaps to regional and more distinctive names. Nevertheless, a considerable proportion of the population of Britain will find their names in his book. There are a number of small slips which might be corrected in a second edition, and Guppy's book, *Homes of Family Names*, published in 1890, might have been included in the brief

bibliography. With all his faults, Guppy is a fascinating quarry. The subject of the localization of family names could well be taken up

again by some competent scholar. It would occupy many years of full-time work, or one might have commended it to the attention of

Mr. Hughes, already a man of many parts but not quite so time-free as this.

W. G. HOSKINS

New Novels

A Heritage and its History. By I. Compton-Burnett. Gollancz. 15s.

The Humbler Creation. By Pamela Hansford Johnson. Macmillan. 16s.

The Dharma Bums. By Jack Kerouac. Deutsch. 15s.

The Loneliness of the Long-Distance Runner. By Alan Sillitoe. W. H. Allen. 12s. 6d.

A Heritage and its History appears with the same kind of setting, the same extraordinary method, as its fifteen predecessors. The response to Miss Compton-Burnett's work is usually extreme; it is either addiction or allergy. My own is neither; it is a slightly unwilling admiration. Admiration, because her novels are plainly among the most completely achieved artistic products of their day; unwilling, because there is an element almost of perverseness in the stringent limitations that she imposes on herself.

Here as usual the period is vaguely Edwardian, but there is no suspicion of a 'period piece'. The occurrence of the post-1914 world could not be even dimly suspected from these pages. As often, the setting is a country house, and the characters an almost totally enclosed family circle. There is a coast somewhere, for a train comes from it. Oxford exists, for one of the young men goes there. There is a butler, and there are two maiden ladies who later marry into the family. But there are no neighbours, there is no London, and we have no idea where the house is situated or what it looks like, except that there is a creeper outside one of the windows and a bookcase in the hall.

The house is the inheritance of the title, and it is of sufficient grandeur to be the dominant influence on the life of everyone. For most of the time it is in the possession of Sir Edwin, who is sixty-nine when the book opens and lives to be ninety-four. It is expected that the property will pass to his nephew Simon, and that is the only thing that gives meaning to Simon's life. The hope is delayed, revived, apparently destroyed, and in the end unexpectedly fulfilled. There is an untimely death, an illegitimate birth, and a love which would have been incestuous had it been consummated.

The fate of the inheritance is the controlling factor throughout. All the characters, including the children, talk in the same dialect, literate, cultivated, of terrifying intelligence and penetration. There is almost no narrative, it is all done in dialogue; and one of the few objections one could make to this perfectly accomplished technique is that it is often hard to tell who is speaking and how many people are in the room. There are elements of unresolved mystery; the unexpected bride who turns up as a goddess from the machine at the end of the story seems to have had some previous relation with Simon; and this is never explained. On reflection I suppose the effect to be deliberate; a calculated air-hole in this otherwise sealed box. So there we are; the addicts will have one more item to feed their passion; the allergic will know what to avoid; and newcomers to Miss Compton-Burnett's world could as well begin here as anywhere, for it is all of a piece.

Pamela Hansford Johnson's distinguished novel is as good an example as we could find of

the opposite way of going to work. Time, the present; place, the vicinity of Cromwell Road; a society limited indeed, but giving a compelling sense of being a part of the great continuum of contemporary London life. Church, house, pub, street, tube-station—we know exactly where we are. The characters have present situations, and they have also had pasts in different places and are to have futures that will be different again. I cannot help feeling that this, the central traditional method of the novel, is a more exacting way of working than Miss Compton-Burnett's. She has only to be consistent with her own spare and highly stylized conception; Miss Hansford Johnson has to be consistent with all the multiplicity of our daily experience—experience of what Kensington is like, of what parsons, their wives, retired Colonial Civil Servants and drunken journalists are like; of how such people speak, and what they eat, do, wear and feel.

In this she never strikes a false note; indeed a resolute refusal to stray from actuality into novel-land is the mark of her writing. There are no moments of violence in this book, no sudden deaths or illegitimate births. There is the presentation of a moral struggle, originating without intention, conducted in the confused terms and the distracting setting of such struggles in actual life, and reaching in the end a sort of solution—the imperfect solution that such struggles commonly reach. Maurice, the overworked, underpaid, harassed London parson, is rubbing along with his shabby household full of jarring relatives. His wife is no help to him and he finds friendship, ultimately love, elsewhere. This is impossible for a man in his position. He almost comes to the point of giving up the position, but that too becomes impossible; he gives up his chance of happiness and returns to endure things as they are. There are no heroics and no romanticisms; we are held firmly to the terms on which life is actually lived. The impression of reality so thoroughly overcomes the awareness of fiction that we are almost in danger of overlooking how finely the book is written—and how finely felt.

I have been reproved in America for liking Kerouac, and I can see why. But the liking persists. It even survives the present work, where his beats and bums are transformed into bhikkus. The lunatic loafers of *On the Road* have now all caught Zen Buddhism, or what passes for it in California. Travelling as usual on freight cars and in automobiles, fortified with baked beans and specially prepared breakfast cereals from the supermarket, furnished with intricate rucksacks, eiderdown sleeping bags, polythene food-containers and ingenious collapsible cooking-pots, they have renounced industrial civilization; sustained by what is left of their last foundation grants they spurn the

vain riches of a commercial society; and surrounded by a changing entourage of cute, gone far-out little girls who strip themselves naked on the slightest provocation, they follow the arduous road of spiritual enlightenment. And wow, man, how it all adds up to one hell of a philosophy of life.

The Buddhism can be safely neglected; pretty well all except a few fragments of vocabulary is a do-it-yourself job made of home-grown material. Whitman, Mark Twain, Emerson, Thoreau, with a small contribution from Henry Miller and the Girl Scouts, provide the elements; the catalyst is a maniacally expansive temperament; and the result is an all-American compound that brings with it a kind of dotty exhilaration. The prose-poems and the philosophizing are abysmal; but the travel, the shifting scene, the Whitmanesque sense of great landscapes and wide horizons, are quite authentic. So is the cheerful contracting out of society while enjoying whatever of its conveniences come handy. So are some of the human relations. Above all, in his good patches, Jack Kerouac can write. He has contrived (for I don't think it came by nature) a liquid colloquial way of running on that is just the right medium for his material.

Alan Sillitoe's book of short stories, *The Loneliness of the Long-Distance Runner*, also exploits a colloquial idiom. All these tales are told in the first person by characters from a Midland working-class world, and the attempt to make them express themselves in their own language is interesting and worth making. I do not think it succeeds completely; this is something that English writers of fiction simply cannot manage as well as the Americans. Mr Sillitoe's characters seem obliged occasionally to step outside themselves, to become more literate and analytical than they should, in order to make their points. Nevertheless the result is a vigorous and original set of sketches. They show a grave and deep understanding of the cramped, the poor, and the dispossessed; and incidentally suggest how many of them there are behind the façade of the welfare state.

The title story is the most considerable. It is about a Borstal boy who deliberately loses a long-distance race, on which all his small privileges depend, to show that he will not compromise on any terms with authority. The trouble about this kind of thing is that it is so often sentimentalized; but I do not think that here the sick and sullen hopelessness of the protagonist is presented as anything other than it is. All the same it is a study of integrity of a kind; and several of the other stories are too. This is serious writing, and a far cry from the Lucky Jim larks that have passed in the last few years as a picture of provincial life.

GRAHAM HOUGH

Read...mark...learn...

(and be completely bewildered)

Some motorists revel in mechanical details. A car manufacturer's lubrication chart is their idea of bliss. Others (and who shall blame them?) are either baffled by such things or just can't be bothered with them.

But *someone* must bother. There are between 35 and 40 parts of a motor car that need regular checking, greasing or lubricating. The car won't fall apart if they don't get it, but it will run much better and more economically if they do.

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CRITIC ON THE HEARTH

Weekly comments on B.B.C. programmes by independent contributors

Television Broadcasting

DOCUMENTARY

The Psycho-Magician

CONJURING, IN GENERAL, is not good television: I mean the sort where a bikini'd lady is immured in a container of dubious construction and sectionalized, or a hot chicken is materialized out of a trilby hat. Through the eye of the camera all things are illusion: illusion within that illusion lacks point. Mr. Chan Canasta (Fridays) is not that sort of conjuror (if he will forgive my begging the question of his status) at all. Billed as a 'Psycho-Magician', he appears before us armed with the simplest of apparatus, a few packs of cards, a shelfful of novels; and, I had almost added, with the simplest of audi-



Chan Canasta giving a demonstration of 'psycho-magic' on September 25

John Cura

ences. With that apparatus, and with the bemused co-operation of that audience, he proceeds to perform a variety of what he slyly but perfectly truthfully calls 'experiments', the astonishing results of which are enough to drive the hardest-headed rationalist to the wall. For instance, he and the audience decide together on a word. One member of the audience selects a book. Another selects a page. Another, a line. And there, on that line of that page of that book, is that word. It is precisely the simplicity that is so baffling.

How is it done? As Sherlock Holmes was fond of saying, when we have eliminated the impossible, what remains, however unlikely, is the truth. There is, at any rate, no need to fly to thought-transference, clairvoyance, and that lot. Mr. Canasta is a superb manipulator. He can manipulate physically; he can 'force' a card irresistibly; he drills his packs like guardsmen. But what puts him into a class of his own is the quality of his mental manipulations. He uses suggestive techniques. I also suspected him in his first programme of using subliminal techniques, although it was impossible to check this without being in the audience: and in his second, when he actually included home viewers in his 'experiments' (I have no doubt with the greatest success), this was perfectly confirmed. And how beautifully he used them too! On top of this, each completed 'experiment' is a perilous construction of giddy but calculated risks, all of which somehow or other managed to come off. Seeing 'how it is done' does not, I need

hardly state, diminish one's admiration for Mr. Canasta. On the contrary: he makes other 'conjurors' look like alchemists in the presence of an atom scientist.

If I were a party chairman behind one of those many 'election broadcasts' that are at present weighing down the air, I would hire Mr. Canasta to whisper a few sweet words to the camera, and come romping home with a majority of 400. But seriously, it is a little frightening to see how very easily a word or notion may be slipped into an unsuspecting head. And what about that audience, by the way? They are billed as 'a panel of well-known personalities'. Well, we know what that means. Not Fred Hoyle. Not Bertrand Russell. Not Dame Edith Sitwell. But a bunch of actors and actresses from TV Rep. Fair enough; and obviously quite perfect for Mr. Canasta's naughty purposes. But I found myself wondering how he would do at a session of the Brains Trust—and coming to the regretful conclusion that he would do just as well! For it seems to me that the requirements for a good Brains-Truster and for not being charmingly duped by Chan Canasta are just the same: a capacity for purely disinterested ratiocination. That is not at all the same thing as being an 'expert' or a devotee, though Brains Trust selectors do not seem able or willing to make the distinction. Who has that capacity? I would cite Bronowski for one and Ayer for another, and could string it out to perhaps half-a-dozen names, which it would be only negatively invidious to mention. The others, to put it perfectly bluntly, seem to me incapable of uncommitted abstract thought on any sub-



Ghanaian women gossiping in the market: from the documentary film *Journey from Eisa* on September 20

John Cura

ject whatever, though of course they are not unamusing with their prejudgments, false premisses, vested anecdote, and plain misunderstandings of the question. I have watched almost all the Brains Trusts for the past three months: in each case I have been mildly entertained and mildly irritated, but have never derived anything approaching mental satisfaction.

Aidan Crawley's 'With Europe in View' (September 23) brought together three distinguished persons in as many European capitals, and they discussed things solemnly by means of the linked lines of Eurovision. This was no doubt a technical triumph; but the result was scarcely worth it. A man in a studio (props: one chair, one table, one map on wall) may be in Mayfair or Mozambique for all the viewer knows or cares about it. 'The technical facilities', says Mr. Crawley, 'cost almost as much as a normal documentary programme before the producer has begun to think of the content of the programme at all'. Now wouldn't it really have been both better and cheaper to have bought two of those distinguished persons airline tickets, to have stood all three of them a slap-up dinner, and then let them talk it out at each other's elbows? Who wants to sit down in cold blood and chat at a face in a box?

HILARY CORKE

DRAMA

Family Warfare

NO THEATRE ever bore a less appropriate name than the Manchester Gaiety. It was here that comedy, the bachelor of the arts, had its spirit broken in captivity: with a cry of 'laugh at that if you can', Miss Horniman's myrmidons dragged the poor thing through a succession of gaunt, hideous living-rooms where taciturn husbands and fretful wives sat eternally awaiting the next harrowing blow.

I am not denying that this cruel procedure yielded some masterpieces. But it was not the spirit of Houghton and Allan Monkhouse that passed into the bloodstream of British drama when the Manchester repertory movement came to an



Michael Gwynn as Harry and Sheila Burrell as his wife Sally in *It Isn't Enough*

end; it was the Gaiety's merry-go-round of relentless family strife, domestic confinement, and the clamour of married voices reciting their grievances.

This cantankerous sound is still very much in the air, and television playwrights have not been slow to increase its volume. Drama of family warfare is in two ways a gift to the script-writer: in the first place it offers a specious way of satisfying the demand for studies of modern life; and, secondly, it is a technical walk-over—there is no easier way of writing a play than to bring on the marital duellists and keep them hard at it for ninety minutes with a tight-lipped pause at half-time when the wounded husband retires to sleep alone in the box-room.

Two variants on the standard model were shown over the week-end. Of them I preferred the first, Eileen Hall's *It Isn't Enough* (September 26). This at least had clarity of outline and emotional consistency which were nowhere to be found in Winston Clewes's *It's an Ill Wind* (September 27).

Miss Hall's play, first heard as a piece for radio, was a straightforward treatment of the ruinous effect genteel poverty can have on a relationship. It was all summed up the night before when Tony Hancock and Sidney James, returning to East Cheam after a three-months' absence, discovered a mountain of milk bottles on the threshold and a red-hot television set within; their subsequent attempts to live within their means were rather more inventive and distinctly more entertaining than any suggested by Miss Hall, but she was not to know that the ground was thus to be cut from under her feet.

Harry has been slaving away for eighteen years as an accountant with a firm in the Midlands, always living slightly above his means: perpetually tired out, he is turning into a jumpy, querulous wreck. Money motivates the entire action: the wife has fallen into the habit of accepting gifts from a local admirer, and Harry has grown accustomed to advancing himself private loans from the firm. The revelation of these confidential practices stimulates the couple into the usual strident dialogue between failure and dissatisfaction, but it is worked out with skill and more emotional honesty than one would find in a woman's magazine story. Miss Hall comes to grief in presenting Harry's place of work where, between dictating final demand letters, he fleets the time with a protective secretary and a boss drawn from the cartoon pages of *Kroko-dil*. Peter Dew's production offered the collectors' piece of Michael Gwynn speaking in flat Midland dialect; and there was a stark, hard-faced performance of the wife by Sheila Burrell. Could this have been the actress who played Barbara Allen in *Dark of the Moon* ten years ago?

Since *Hot Summer Night* John Slater has become firmly type-cast for labour relations parts, and in *It's an Ill Wind* he was back in the saddle, hectoring his family and flaying the shop stewards in a continuous roar of bull-throated exasperation. But on this occasion he encountered stiff opposition from the family. Vehement is a mild word to describe their tooth-and-claw manner of arguing, attacking a meal, and throwing stray reporters out of the house. The set swarmed with combative relations. Gloria, moping and pregnant, rooted herself to the couch uttering shrill complaints. Jim trumpeted the case for the unions against his father's answering bellow on behalf of the employers. Enter the daughter and her young man, also at loggerheads. In between these warring groups moved the solid figure of mother, her voice

occasionally rising above the babel to announce that it was time for another cup of tea.

This was a shapeless and noisy piece (both qualities being amplified in Brandon Acton-Bond's production), but a certain repellent theme did emerge from the general tumult. The plot concerns the promotion of the father, after twenty-five years of work, to the position of manager of his department. There is a danger that this reward may be snatched from his grasp by an upstart union leader who calls out the men on unofficial strike in defence of solidarity. And there is no doubt that the strike is justified, for the father is a pattern of the



Gene Anderson as Brenda Carpenter and David Knight as Christopher March in *A Mask for Alexis* on September 21



Hancock's Half-Hour on September 25: Tony Hancock (right) with Sidney James

well-behaved worker who is all in favour of paternalist employers. When this point is fully stated he gets his modest reward, and Mr. Clewes's comment stands revealed—there's no denying that these people are 'proles': look how they eat, look how they talk. But in spite of their awful manners they're rather lovable, aren't they?

Alun Owen's *The Rough and Ready Lot* (September 22) scarcely qualifies as a television event as it was telerecorded from Casper Wrede's production with which the 59 Theatre Company completed their excellent season at the Lyric, Hammersmith. It is an immensely well-written piece, packed so densely with argument, elaborate characterization, and historical detail that its action is occasionally in danger of paralysis. One or two performances had been modified for the better—particularly Patrick Allen's O'Keefe, a Jesuitical fanatic who, on the stage, was little more than a red-eyed crazy man. Jack MacGowran's Captain Kelly, the mole-like chocolate soldier with a passion for soap and water, remained one of the

great performances of the last few years.

Dame Margot Fonteyn and Michael Somes brought five minutes of distinction to an indifferent Variety programme, *Set to Music* (September 22). They captured a mood of fragile tenderness in a scene from Hans Werner Henze's *Ondine* which, given less than superlative performance, could have appeared merely as a string of classroom clichés.

IRVING WARDLE

Sound Broadcasting

DRAMA

Tradition Wins

THIS IS NOT an age for heroes. M. Henry de Montherlant's *Don Juan* (Third, September 22) is therefore something of a seamy shadow beside the *Don Juan* of Molière (Third, September 15). Molière's play is a religious and moral battle in which the Don's indiscretions are calculated thrusts at an established order. Like a true Faustian his giant life comes to a giant end. In an age that enjoys belittling, M. de Montherlant finds the Don to be nothing more than a hedonistic old roué with nothing more in mind than the spoliation of the next young girl. Though he may be trying

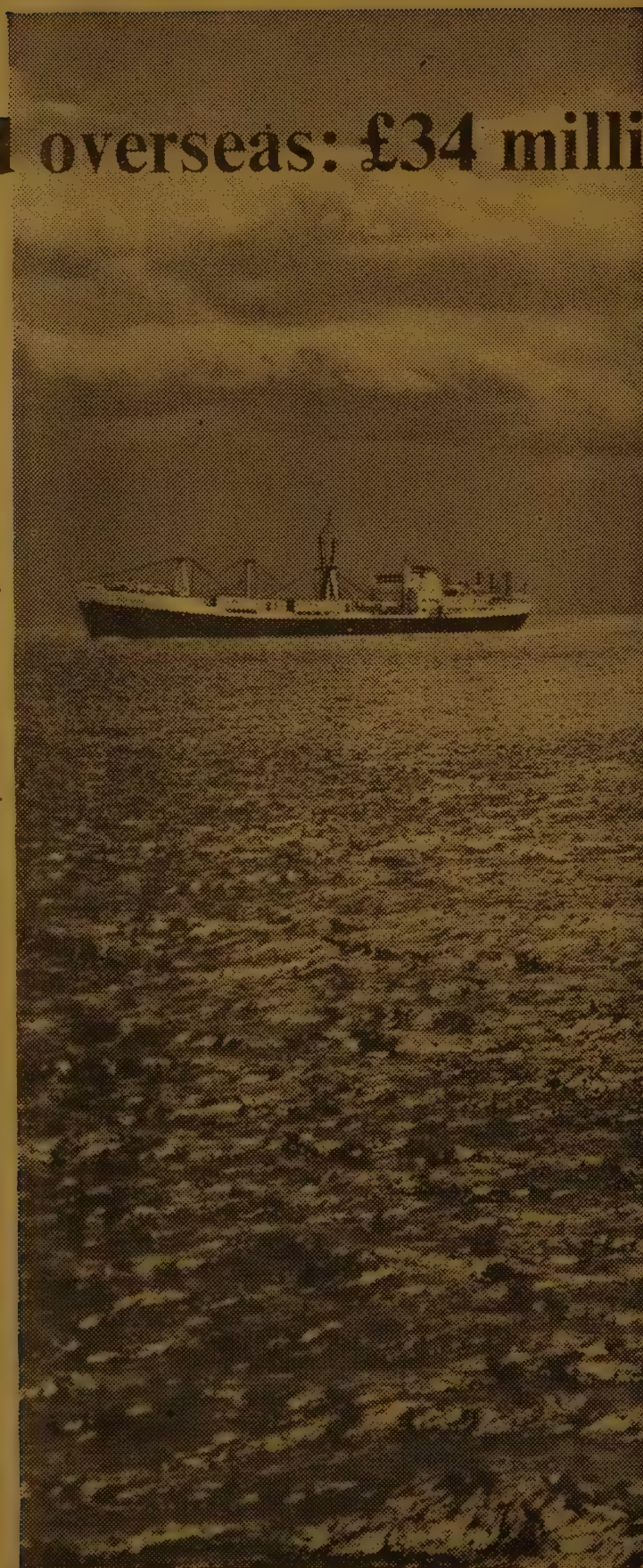
to suggest that our Don Juans of today are no more than Lolita hunters and that this is despicable of them, he has so much fun at the expense of his dirty old man that the original theme of *Don Juan* is belittled and lost.

M. de Montherlant achieves some very good theatrical effects which were adapted well for broadcasting by H. B. Fortuin. But theatrical effects do not make up for the absence of any clear didactic purpose. Roger Livesey interpreted the tired old man brilliantly and managed to get across the anguish that the Don feels when he finally knows some kind of love. But there was no nobility and there could not be. Mr. Marius Goring as Molière's Don had a more straightforward task and was helped majestically by Jack MacGowran's Sganarelle. As Othello is nothing without Iago, so Molière's Don is nothing without Sganarelle. Mr. MacGowran's sly, subtle, occasionally croaking, servanting voice brought on Mr. Goring.

Mr. R. D. Smith so worked the climax that I swear my heart stopped for a moment when Molière's character died. There was a great-

Shipped overseas: £34 millions' worth

IN THE LAST TWELVE MONTHS, no less than £34 millions' worth of tinplate and sheet steel have left the City of Steel in the form of direct exports. But that is not all. Indirect exports, goods like motor-vehicles, tractors, washing-machines and refrigerators that are made from Steel Company of Wales' products, have earned many more millions of pounds. This has been a record year for exports, achieved in the face of increasing competition in world markets.



For the City of Steel it is the end of another financial year's trading.

In due course, the accountants will present their report, and the chairman will make his statement. Without anticipating this, one important fact can be released now: that this one company will have sold over £34 millions in direct exports—£6 millions more than last year.

Most of this considerable figure represents overseas sales of tinplate.

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This is the City of Steel's 1959 export achievement. It is the result of planned salesmanship and painstaking search for new markets, often in the face of intense foreign competition.



THE STEEL COMPANY OF WALES LIMITED

This is Broadsheet No. 16 from the City of Steel

ness about the performance because there was a greatness about the play. Though I have much respect for M. de Montherlant's wit I remain a traditionalist, preferring Don Juan à la Molière.

The production of *The Children of Lir* (Third, September 21) by Douglas Cleverdon was important because it constituted one of those rare attempts at a pure radio form. The story was taken from Irish legend, and the words by H. A. L. Craig were matched by sounds created by Tristram Cary. The story of the children is that they were changed into swans and that they remain miraculous as talking swans for many years. After hundreds of years they are freed and fly home. They are caught and are asked to talk to men. But when they do so they are changed into human form. They become grotesque and old and their beauty is gone. Mr. Cary contrived sounds to simulate flight and the metamorphoses. Mr. Cleverdon balanced the volume successfully and would have achieved a total sense of form if he had made Mr. Craig's words come through sooner. Mr. Cary's introductory sounds seemed slightly too large and just managed to upset the balance of a programme that pointed towards the future of radio.

Though Welsh writers sometimes deplore the narrowness of their environment, they derive an extraordinary strength from it. Richard Owen (Clifford Evans) in John Gwilym Jones's *A Father and his Son* (Home, September 21) is larger than a father in any English home but no one doubts his patriarchal tyranny in a Welsh situation. He dotes on his younger son whom he believes to be one of the Lord's Anointed. His obsessive love drives the boy into the arms of a girl newly moved from Liverpool, a place that he regards with North Wales eyes as Sodom and Gomorrah. He tries to wean the boy away but when he fails he resorts to letters threatening murder. The discovery of the letters breaks him and his disgrace is made to seem terrible and inevitable. Mr. Jones employed the ruse of a next-door neighbour to involve the listener in his play but one soon forgot that it was a ruse and became involved in the tension. Emyr Humphreys translated the work from Welsh and produced it.

One Evening In Late Autumn by Friedrich Dürrenmatt (Home, September 24) employed a technique which has been rather overworked by German radio writers, and I am surprised that it won an Italia prize as recently as last year. To overcome the convention of the medium a character is made to announce that it is a convention. There then follows a story that is about a story. A famous writer is heard telling the tale of how he was confronted with a man who has proved that he has killed all the people that he has described in his murder stories. The man is forced to fall from a window and the play ends with the writer dictating once more his radio play. The script gave Peter Bull, as the writer, a wonderful opportunity to demonstrate the dexterity and range of a really well-trained voice. It was not his fault—nor the fault of Timothy Bateson as the intruding man—that one was too aware of the play's artifice. I expected more from the author of *The Visit of the Old Lady*.

IAN RODGER

THE SPOKEN WORD

Little Eyases

EYEING THE WORLD from their little eyries, built on the twin privileges of enlightened education and understanding parenthood, four typical children gave us their views of life this week, with the help of a minimum of tactfully placed questions by a couple of experts from the Froebel Educational Institute, last Saturday

morning (Home, September 26). In the world of childhood, the tot, I suppose, is an absolutist, and the adolescent is a romantic; but these were all children from that midway era, twelve to thirteen, which is more difficult to chart. They had given up the anarchic games and begun to enjoy the fact, without many of the pains, of growing up.

This seems to be the stage when common-sense keeps breaking in, and some of the stratagems of earlier years, still kept up, are seen for what they are. Crying, for instance. After tears and misunderstandings, 'I go on crying artificially, sort of, to make them come up and comfort me, and say they are sorry'. The adult world divides between parent and teacher, with a resulting withdrawal, a comparing and detachment. Adults may seem aloof, irritable, their incalculable behaviour hiding possible weaknesses. They refuse to make you understand, or else, as strangers they are 'so boring when they make conversation about where you live, and the weather and so on'. Even so, identification has to begin. In games of fantasy, 'we like to imitate real people now', and 'I like to be people who are really rather bad'.

Along with identification and criticism ('we like saying the bad things about grown-up people . . . because we're jealous, of course'), three of the four were unanimous about the need to be alone. 'What d'you think about, when you're alone?' 'I don't know. It just comes. Stars . . . and atoms, and things'. What may be remembered later as a sense of wonder in fact seems to spread out into eras of necessary doldrums: the sense of being oneself, adrift in a world of otherness. Perhaps every twelve-year-old is his own kind of existentialist? And then out of this inertia breaks the will to assert. 'Yes, I can concentrate, if I'm sitting up straight, and sort of hurting myself a bit', said one of the girls, with a hint of that welcoming touch of masochism that goes into will-power.

Altogether these were a cool and candid quartet, self-possessed and refusing to play up to any particular audience. The idealizing adult might have found them a bit exasperating. But then childhood remembered tends to be a diminishing mirror, in which everything is intensified, whereas to most children (of this age) the intense is perhaps automatically suspect. What they are after, on the contrary, is the matter of fact, even if they cannot take in much of it at a time.

This programme for me seems to have cast its aura over the previous ones of the week. S. J. Perelman, for instance, the American humorist answering questions in 'Frankly Speaking' (September 23, Home) left me wondering if his brand of humour is not a case of one of the attitudes we confer on children (without their prompting) being fixed, stratified and, you might say, processed for human consumption. An old hand at the game, Mr. Perelman knew all the answers and gave such as he chose. To be a professional humorist, and supply that periodic dose of escape and rebellion, you have to be at odds with your environment, you have to hate where you are. And so you 'prefer to remain nowhere for any length of time'—peeling off the humorous skin of things and letting it fall at your audiences' feet, as you go. Mr. Perelman's voice suggested some new figure in cartoon films—a more sophisticated Popeye, perhaps.

Then there was 'Matters of Moment': capitalized this week as 'Mr. Khrushchev in America' it set out to reveal (September 24, Home) reactions to The Visit through the mouths and minds of four typical Americans. But some comic Nemesis had presided over the choice of types, and the answers at times were a pure orgy of cliché and stock response.

'Waal', said a woman member of the panel, in a ventriloquial voice, 'we don't like him any better. But we must pursoo this thing. We must be flexible, but naht lose our shirts'. Common sense was lost among this caricature, and the total effect was like some comic-strip of an incredible, and incredulous bunch of die-hards, huddled together, clinging to their shirts, while the ice-floes cracked all round them.

DAVID PAUL

MUSIC

A New Vision of Job

THE FASCINATION of watching a new vision, as seen by a poet and noted down by a masterly musician (one and the same person in this instance) was what I felt while listening to Luigi Dallapiccola's *Job* in the excellent Third Programme broadcast on September 20. That this came over as a complete vision, intact and convincing throughout, suggests that the performance under Walter Goehr did the work justice. At any rate, it provided an experience that I am glad to have had.

One thinks in this context, if one is English, of Vaughan Williams's masque for dancing, his own magnificent *Job*; one thinks only to revise one's thought perpetually; for the works are far apart in style though they share a common reverence. Vaughan Williams was inspired by William Blake, Dallapiccola by Epstein's *Ecce Homo*: knowing which fact, one realizes immediately why the works differ one from the other, having such contrasted visual approaches. Vaughan Williams would never allow his work to be termed a ballet; Dallapiccola shies away from the idea of opera or even dramatic cantata, calling his *Job* a *sacra rappresentazione*.

The representation of the various episodes was clear, at times, startlingly so. The narrator Sergio Gazzarrini helped there; his cool voice and fine enunciation could not have been bettered. Without a score or an Italian libretto the choral utterances (B.B.C. Chorus) taking the part of God, that of Satan, sometimes in murmured speech, sometimes in singing, were bewildering; there I lost my way, finding it again as soon as I made contact with Job himself, a beautiful performance, I thought, by Scipio Colombo. The quiet ending of it all, with simply the narrator and a few wind instruments was very effective.

Curiously enough Dallapiccola's music, the work of an Italian composer not yet fifty, proved to be nothing like as precipitous and harsh as many parts of Vaughan Williams's great score; nor, for that matter, as smoothly lyrical; there was neither the huge plunging design for Satan nor the pastoral loveliness of Job at peace. Dallapiccola invents some strange sounds and new textures, nevertheless, and this work deserves all our attention and willingness to study further.

One of Vaughan Williams's last works was heard on September 22 (Third Programme), the ten Blake Songs for tenor and oboe, written for Wilfred Brown and Janet Craxton who performed them that night. Here was absolute mastery of the medium, a perfect scansion of the poems and an unfailing strong and subtle touch on the musical equivalent as it came from the composer's mind, for example in the last unforgettable song *Eternity* but not only there.

The Netherlands String Quartet followed the good custom of bringing with them a work by one of their own people, in this case a quartet by Willem Pijper, his third. I had not heard this work for some four years but instantly I recaptured my initial enjoyment and the sense that this was highly intelligent writing, the more re-

markable when one thinks of the influences from outside (France, Germany, Russia) that would have to be assimilated and either accepted or resisted in this difficult task beyond the most hopeful expectation. In this third string quartet is the evidence of his success, and in this splendid performance the music lived again with great vitality.

'New Music in short forms' (September 21, Third Programme) was distinguished by some remarkable singing from Peter Pears with John

Wills as more than just an 'accompanist'. The *Five German Songs* by R. W. Wood are sensitive, subtle, cultured works of art; sung and played as they were here they sounded extraordinarily attractive. The composer has discovered in these charming things a succession of textures of voice and pianoforte that are effective and always pleasing to the ear, whether in the vigorous *Oktobierlied* or the visionary *Wahrhaftig*. Over almost before it had begun, the minute *Rondo scherzoso* by Alun Hoddinott for the rare (and risky) combination of trumpet and pianoforte none the less left a distinct impression, one of intelligent, quick-moving thought and excellent assured craftsmanship. The

work was finely played by David Mason (trumpet) and Joyce Hedges.

In the last of the special recitals of songs and piano music by John Ireland, celebrating his eightieth birthday Eric Parkin gave a good account of the piano sonata (September 24, Third). He is a dedicated Ireland enthusiast and this interpretation was manifestly the result of keen thought and careful calculation. These are virtues and they paid dividends. To make this admirable performance there was only needed a large impulse, a heavier striking power at each climax. At those moments one felt let down, slightly disillusioned, in danger of forgetting how fine the rest of the playing was.

SCOTT GODDARD

A New Shakespeare Opera

By EDWARD LOCKSPEISER



Frank Martin's 'The Tempest' will be broadcast in the Third Programme at 7.45 p.m. on Monday, October 5

COMPOSERS WHO nowadays spend more time reading than listening to other people's music are an interesting species, and one of them who, in three of his principal works, has been inspired by the ancient legend of Tristan, the poetry of Rilke, and Shakespeare's *The Tempest*, must claim as much attention from literary as from musical people. The Swiss composer, Frank Martin, has written many abstract works, but it was in *Le Vin herbé*, a setting of three chapters of Joseph Bédier's version of the Tristan legend, that he showed his true cast of mind. Bédier's *Tristan* is a work of great historical and artistic importance. It appeared at the time of the revival of interest in medieval architecture of which it was held to be a literary counterpart. Martin's setting, in the form of an oratorio, was not wholly successful, but it has an interesting period value in that it provided, though somewhat belatedly, a musical interpretation of this medieval revival.

Then came the song cycle, for contralto and small orchestra, of Rainer Maria Rilke's early poems, *The Lay of Love and Death of Cornet Christopher Rilke*. This, too, was a work which made a great impact in contemporary literature. It contained in embryo all the philosophical themes of Rilke's later works, and it was here that Rilke first questioned the nature of courage and fear, innocence and divinity. Martin's setting shows him to have been aware of all the undertones in Rilke's poetry and to have seen, too, the mysterious interlocking of one poetic idea and another.

An Ambitious Undertaking

Thirteen years later Martin completed his first opera, *The Tempest*, produced in German as *Der Sturm* at the Vienna Opera in 1956. A setting of *The Tempest* in the form of an opera is an ambitious undertaking. To begin with, Shakespeare's own conception of his valedictory comedy, with its philosophy of the fantasy of music, its evocation on the magic island of 'noises, sounds, and sweet airs', its numerous songs and its masque, was something very near an opera in itself. *The Tempest*, like the legend of Orpheus or the libretto of *The Magic Flute*, is a literary fantasy born of a musical idea. Ariel, if not actually a musician, draws music out of the circumambient air, and is therefore a personification of the musical spirit. Prospero's magic spells are also to be understood as the workings of the mysterious power of music ('When I have requir'd some heavenly music to

work mine end upon their senses'). To find, therefore, today, or indeed at any time, an interpretation of Prospero's 'We are such stuff as dreams are made on' that shall satisfy both literary and musical demands—for in an operatic setting of a Shakespeare play nothing less will do—is asking much. There is further the problem for an opera composer of the characterization of Caliban, Prospero, and Miranda, the dual themes of love and discord which must be reflected in the music, the scenic contrasts of storm and calm, and, finally, the most challenging problem of all, the musical interpretation of the symbolism of the poetry.

Concern with Characterization

From a study of the piano and vocal score of *The Tempest*, containing indications of the orchestration, I have no doubt that Frank Martin has fully pondered these problems, and probably many others as well. The point is: which of them was to take precedence? It seems that the composer was principally concerned with characterization. A curious conception is offered of the part of Ariel. Since Ariel is a spirit, his part is taken by an actor who merely mimes and dances while his lines are sung by a chorus off-stage, accompanied by a small orchestra. In theory this solution seems to offer the very illusion of other-worldliness which the part requires; and, indeed, the Ariel songs are in themselves most beautiful. I am told, however, that at stage performances of *The Tempest* the illusion of the many voices of nature personifying the airy spirit and chanting 'Where the bee sucks there suck I' was destroyed by this device. A Shakespearean scholar to whom I put this matter was similarly sceptical. 'How can a mixed chorus', this scholar declared, 'give the impression of Ariel lying in a cowslip's bell?'

Elsewhere Martin relies largely on instrumental effects for characterization. When Caliban hurls his vile curse on Prospero ('All the infections that the sun sucks up from bogs, fens, flats, on Prosper fall') the oily tones of the saxophone are heard, joined later by a tuba. I like, too, the idea of an army of percussion brought in for Caliban's grotesque song, 'Ban, Ban, -Ca-Caliban'. The very rhythm of the words suggests a percussion band, and it was an excellent idea to have the song sung in chorus by Trinculo and Stephano. Caliban's vision, 'Sometimes a thousand twangling instruments will hum about mine ears' is convincingly mirrored in an accompaniment in which harp,

celesta, and a solo violin are prominent. Ariel's entry in Act I is also imaginatively thought out. The accompaniment is for harpsichord and percussion.

The solo vocal parts are less interesting. For the most part they are conceived in recitative style with many repeated notes and proceeding by small intervals. The criticism of this vocal writing in Vienna was that although Martin used the German translation of *The Tempest* by Schlegel (considered one of the finest of all feats in translation, and a remarkable literary work in its own right) the inflexions of his vocal line were those associated not with the German but with the French language. This may very well be, though I imagine that what struck the Viennese critics was not so much the strangeness of the inflexions, but the limited range of the vocal parts. The love music between Ferdinand and Miranda could surely have been more expansive and opulent.

In the forthcoming production Shakespeare's original text will be used. This is made possible by the fact that the Schlegel translation adheres fairly closely to the original metre, so that only occasionally has a crotchet or a quaver to be altered. Shakespeare's five acts are compressed into three, but with the same number of scenes. Several minor cuts have been made, but only one of them is unfortunate—the first reference to Caliban in the scene between Prospero and Ariel in Act I, which deprives us of the marvellous description of Caliban ('A freckled whelp hag-born—not honour'd with a human shape').

Poetic Symbolism in Music

There remain the methods by which the symbolism of the poetry is reproduced in the music. They are often ingenious and are best seen in the choral songs of Ariel, written, as it happens, long before the opera and quite independently of it. The 'Bow-wows' that punctuate 'Come unto these yellow sands' are humorously brought out in the basses, while soprano and muted trumpet perform a quaint little duet on 'Cock-a-diddle-dow'. An eight-part chorus turns the 'Ding-dongs' in 'Full fathom five' into a chorus of human bells. An inspired idea, too, is the menacing reiteration of the words 'Remember' and 'Prospero' throughout the whole of Ariel's speech when he makes his appearance as a harpy. And the hooting of the owls—a duet of contraltos—heard in the distance and cleverly woven into the chanting of 'Where the bee sucks' is a little master-stroke.

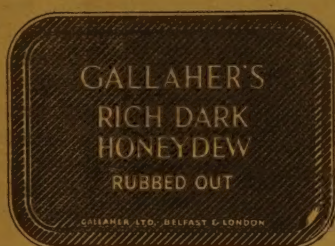


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'Gardening Club'

How to Grow Fuchsias

By PERCY THROWER

THERE ARE FEW flowers more graceful than the fuchsia, and it has many uses. It makes a perfect pot plant, some with upright growth such as the variety *Thalia*, others with a more pendant habit like *Beauty of Exeter*. We often hear the complaint that fuchsias grown as pot plants drop their flowers when taken into the house. Provide them with the water they need, some fertilizer in the water once a week, and moisture to rise up from the bowl or container round the plant, and they will continue to flower from April to October and will not drop their flowers before they have faded.

In tubs or window boxes the fuchsia looks well in combination with other flowers—say, white alyssum, to trail over the side of a tub and geraniums. No other plant will provide a column of growth and flower from June to October as the fuchsia does—provided we water it and feed it regularly with fertilizer. Four planted in April in a hanging basket, sixteen inches in diameter, will completely cover the basket and trail down, flowering from June until the frosts begin in the autumn. The variety *Golandrina*, meaning swallow-like, has large, single, drooping flowers of rosy red. The best of all varieties for a hanging basket is *Cascade*, with hundreds of carmine-pink flowers from June onwards. A hanging basket of

fuchsias needs watering every day, rain or no rain, and at least once a week some fertilizer should be added to the water.

For anyone growing for the first time these half-hardy type of fuchsias, which must be protected from frost. I would not hesitate to recommend the variety *Mrs. Marshall*, free-flowering, with a creamy tube and sepals, and the single flower, or 'skirt' as it is often called, rosy-cerise. *Phyllis* has a more squat flower but it is freely produced along the branches, being



Mr. Percy Thrower showing fuchsias in 'Gardening Club'

semi-double and cerise-red. *Festival* has large, cerise double flowers, two-coloured petals, salmon and cerise. It is a variety of upright growth, showing the flowers to their best advantage. Then there are the *fulgens* types with long tubes and shorter petals.

The seeds from the fruit will not reproduce true to type but cuttings will. Cuttings taken and put in now should be rooted, if treated with one of the hormone rooting powders, in three weeks. Shoots no more than three inches long make the ideal cuttings. Put them into pots filled with a mixture of equal parts of soil, peat, and sand, water them and put into a closed frame or box. If kept in the greenhouse the plants will be at least three feet high by May.

The hardy fuchsias which in many districts are cut down to ground level by frost each winter come up again in the spring and flower continually through the summer. *Fuchsia gracilis variegata* has pale-green and pink tinged leaves, small red and purple flowers, and will grow to four or five feet high. *Tom Thumb* lives up to its name, compact and dwarf, and is covered in mauve and red flowers throughout the summer and autumn. I prune the hardy fuchsias down to ground level in March each year and they flower continually throughout the summer and well into the autumn.—From the programme given in B.B.C. Television on September 25

Bridge Forum



Expert Bidding Contests—I

By HAROLD FRANKLIN and TERENCE REESE

IN THE FIRST of a new series of bidding matches which started in Network Three on September 27 Mr. C. Rodrigue and Mr. J. C. H. Marx of London were challenged by Mr. F. North and Mr. J. Pugh of Hove. The first hand set a problem whose solution escaped them. Game All, Dealer West.

WEST	EAST
♠ Q 10 9 8 6 3	♠ A K J
♥ K 9 7	♥ A J 10 8 4 2
♦ K J 3	♦ 10 7
♣ 9	♣ A K

Top marks were awarded to Six Spades, and Six No Trumps, played by West, was judged second best with eight out of ten. After an initial pass, both East players opened Two Hearts and both West players raised to Four Hearts. Both East players explained this bid as showing good trump support, playing values and no ace. None the less, after this bid it proved impossible to avoid a final contract of Six Hearts, which scored four points.

These were the auctions:

WEST	EAST
(North)	(Pugh)
No	2 H
4 H	4 Sp
5 D	6 H
No Bid	

WEST	EAST
(Rodrigue)	(Marx)
No	2 H
4 H	5 Cl
5 D	5 Sp
6 Cl	6 H
No Bid	

Mr. Marx's Five Spade bid was a gallant effort to find a No Trump contract. Because of a technicality Mr. Marx and Mr. Rodrigue were scored at 4½ for style as against 5 by Mr. North and Mr. Pugh. As in an earlier series, the awards for style are considered only to determine a tie.

Reese and Franklin both felt that West's choice of response lay between Two Spades and Three Hearts, with a preference for Two Spades, arguing that a slam might depend on a spade agreement. Mr. Marx said that after a Two Spade response he might be uncertain how many hearts to bid if partner rebid Three Hearts.

The second hand was this: Love All, Dealer, East.

WEST	EAST
♠ 4	♠ J 10 8
♥ K J 6 5	♥ 10 4
♦ K 9 4 3 2	♦ A Q J
♣ A 10 3	♣ K Q J 9 4

Both pairs reached the optimum contract.

WEST	EAST
(North)	(Pugh)
—	1 Cl
1 D	1 N.T.
3 Cl	3 D
3 H	4 Cl
5 Cl	No Bid

Five Diamonds, slightly less playable, would have scored seven and, in like manner, the club part score was preferred to the diamond part score with five points as against four. Mr. North and Mr. Pugh were awarded a maximum five for the degree of conviction or understanding in their auction, although the rebid of One No Trump appeared unnatural to the judges. Mr. Pugh explained that by their methods it showed a precise high card strength: there is the opposite view that it fails to describe the character of the hand. A maximum score in every respect on this second hand assured Mr. North and Mr. Pugh of success. It was the narrowest of victories, for Mr. Rodrigue and Mr. Marx also scored maximum marks, with a possibly more impressive auction.

WEST	EAST
(Rodrigue)	(Marx)
—	1 Cl
1 D	2 D
2 H	3 Cl
4 Cl	5 Cl
No Bid	

1st prize: Arthur H. Terry (Belfast); 2nd prize: D. R. Laver (West Byfleet); 3rd prize: Mrs. J. U. Grant (London, S.W.11).

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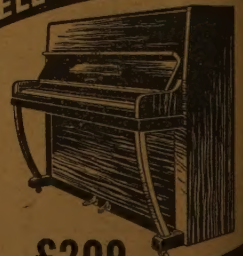
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